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Services

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Brucellosis Eradication

Uniform Methods and Rules

Effective
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The Uniform Methods and Rules for Brucellosis Eradication

INTRODUCTION

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September 1986

INTRODUCTION

This Uniform Methods and Rules (UMR) for Brucellosis Eradication contains the minimum standards of the Cooperative State-Federal Brucellosis Eradication Program. It contains minimum standards for certifying and validating herds, classifying and validating States and areas, and detecting, controlling, and eradicating brucellosis, as well as minimum brucellosis requirements for the intrastate and interstate movement of cattle and swine.

This UMR is divided into three chapters, which are further subdivided into parts. Chapter 1 deals with general provisions for cattle, bison and swine. Part I of Chapter 1 contains definitions. Part II covers procedures used in the Cooperative State-Federal Brucellosis Eradication Program and Part III explains participation in Herd or Area Plans.

Chapter 2 deals with all of the classifications of herds and areas for bovine brucellosis: Certified Brucellosis-Free Herds (Part I); Class-Free Status (Part II); Class A Status (Part III); Class B Status (Part IV); and Class C Status (Part V).

Chapter 3 deals with the classifications of herds and areas for swine brucellosis: Validated Brucellosis-Free Herds (Part I); Validated Brucellosis-Free Areas (Part II); and plans for eradicating brucellosis from infected swine herds (Part III).

The provisions of these methods and rules were approved by the U.S. Department of Agriculture, Animal Plant Health Inspection Service (APHIS), Veterinary Services (VS), with the advice and recommendations of the United States Animal Health Association. The UMR may be amended in the future by replacing pages or by adding new pages.

A note about this edition of the UMR

This edition of the UMR looks somewhat different from the previous editions--it has been reorganized and rewritten to make it clearer and easier to follow. The organization has been made more logical: among other changes, the definitions concerning cattle, bison, and swine have been gathered into the same definition section and all procedures (for cattle, bison and swine) have been placed in the same chapter and part (Chapter 1, Part II). In addition, the definition section has been expanded to include more definitions, while procedures have been removed from the definitions and appear only in the appropriate procedure sections.

In addition to changes in organization, the language of the UMR has been rewritten to make it clearer and less ambiguous. Among other changes, the word "must" (rather than "shall") is used to denote mandatory or required actions and the word "will" (rather than "shall")

is used to denote simple future actions. These changes were made to clarify the use of the inherently ambiguous word "shall" in previous editions. Also, the sentence structure has been made simpler in order to clarify meaning. The changes in language do not change the original meaning or intent of these methods and rules.

Finally, a few changes in the content of the book were made to correct previous inconsistencies and to provide additional information concerning definitions and routine program procedures which had previously been omitted.

CHAPTER 1
GENERAL PROVISIONS--CATTLE, BISON, AND SWINE

PART I
DEFINITIONS

Accredited veterinarian

A veterinarian approved by the Deputy Administrator of Veterinary Services, Animal and Plant Health Inspection Service, United States Department of Agriculture, in accordance with provisions of Part 161, Title 9, Code of Federal Regulations. The veterinarian is accredited to perform certain functions of Federal and cooperative State-Federal programs. The accredited veterinarian is authorized to perform specified activities under the Cooperative State-Federal Brucellosis Eradication Program.

Animal classification--cattle and bison

1. Negative--Cattle and bison are classified as brucellosis negative
 - (a) when their blood serums have been subjected to official serologic tests and the test results fail to disclose evidence of *Brucella* infection, and
 - (b) if blood, milk or tissues are subjected to bacteriologic methods for cultivating field strain *brucella* and none are recovered. In short, for an animal to be classified as negative, all procedures that are performed must fail to disclose evidence of brucellosis.
2. Suspect--Cattle and bison are classified as suspects when their blood serums have been subjected to official serologic tests and the test results are suggestive of infection but are inconclusive. Bacteriologic methods to cultivate *brucella*, from blood, milk, or tissues, if used, did not yield field strain *brucella*.
3. Reactor--Cattle and bison are classified as reactors when their blood serums have been subjected to official serologic tests and the test results indicate that the animal has been exposed to and infected with *Brucella*. Cattle and bison are also classified as reactors in the absence of significant serologic test results when other diagnostic methods, such as bacteriologic methods, result in the recovery of field strain *Brucella* organisms, or a significant rise in the serologic titer occurs, or when other epidemiologic evidence of infection is demonstrated.

Animal classification--swine

1. Negative--Swine are classified as brucellosis negative

- a) when they are from a herd that is known to be affected or a herd of unknown status, and
 - 1) a standard tube agglutination test (STT) discloses a reaction of less than complete agglutination in the blood titer dilution of 1:25, or
 - 2) they have no reaction on the standard card test, or
 - b) when they are from a Validated Brucellosis-Free herd or from a herd not known to be affected in a Validated Brucellosis-Free State, or are swine tested as part of a complete herd test in which no titer, on the STT, is greater than an incomplete reaction at the 1:100 dilution or is positive on the standard card test.
2. Suspect--Swine that are positive on the card test in a herd that is otherwise negative on serological or bacteriological tests and as judged by epidemiological evidence. These swine will be held under whole herd quarantine until they are subjected to additional official brucellosis tests to determine the status of the swine--that is, whether they are actually negative or reactors.
3. Reactor--Swine that disclose complete STT agglutination reactions in the blood titer dilution of 1:100 or higher, or swine in a herd known to be affected or swine tested as part of an incomplete herd blood test of a herd of unknown status that have a complete agglutination in the 1:25 dilution or higher. With the exception stated in the definition of suspect, a swine is a reactor if it discloses a positive standard card test reaction, or is found to be infected by another official test or by isolating or otherwise identifying the Brucella organism.

Animal health veterinarian

A veterinarian employed on a full-time basis by the State animal health official, Veterinary Services, County, or other local municipality, who is given the authority to perform activities in the Cooperative State-Federal Brucellosis Eradication Program.

Approved action plan (Also see individual herd plan)

An approved action plan is the document describing the steps and timetable that will be followed by State or Federal animal health personnel to determine the status of a herd suspected of being affected with brucellosis because of positive BRT or MCI test results or epidemiologic evidence of direct or indirect contact with an infected animal.

Approved intermediate handling facility

A premises specifically approved by both the Deputy Administrator of the Veterinary Services, APHIS, USDA and the State veterinarian for the purpose of receiving and handling cattle and bison for release to recognized slaughtering establishments. Cattle and bison may be held at an approved intermediate handling facility for a maximum of 7 days and may not change ownership during this time. No cattle or bison, except cattle or bison moved directly from a farm of origin, may be permitted to enter an approved intermediate handling facility unless they are accompanied by a permit or "S" brand permit. Cattle or bison transported in vehicles closed with official seals are prohibited from entering such a facility. No cattle or bison may be permitted to leave an approved intermediate handling facility unless they are accompanied by a permit or "S" brand permit which lists a recognized slaughtering establishment as the point of destination. To qualify for and retain approval, a facility must be separate and apart from other livestock handling facilities and meet the same standards for facilities and records as a specifically approved stockyard. Serviceable equipment for cleaning and disinfecting must be furnished and maintained with adequate disinfectant when necessary. Each entrance and exit to a facility must prominently display a sign stating, "all cattle and bison entering this facility must go directly to slaughter." Any document relating to animals which are or have been in the facility must be maintained by the facility for a period of 1 year. State and USDA representatives must be granted, at reasonable hours, access to all documents required to be maintained with authority to reproduce such documents upon request.

Approved Brucella vaccine

A Strain 19 product that is approved by and produced under license of the U.S. Department of Agriculture for injection into cattle and bison to enhance their resistance to brucellosis.

Area

That portion of any State, the District of Columbia, Puerto Rico, the Virgin Islands of the United States, or Guam, that has a separate brucellosis classification.

Auction

A public sale of livestock to the highest bidder.

Auctioneer

A person who sells or makes a business of selling livestock at auction.

Boar

An uncastrated male swine that has reached a stage of maturity that allows him to be used as a breeding animal. The term also includes those uncastrated male swine that because of age or infirmity are no longer capable of being used for breeding.

Breeding swine

Any swine six months of age or over that are kept for breeding purposes.

Brucellosis

An infectious disease of animals and humans caused by bacteria of the genus Brucella. The disease is characterized by abortion and impaired fertility in its principal animal hosts. Usually, Brucella abortus is associated with the disease in cattle, Brucella suis with the disease in swine, and Brucella melitensis with the disease in sheep and goats. Under appropriate conditions, however, brucellosis may be caused by a Brucella organism normally associated with other hosts.

Brucellosis exposed cattle and bison

The following animals are considered to be exposed cattle and bison:

All cattle and bison, regardless of the blood test results (except for brucellosis reactors), that are part of a known infected herd, or are in a quarantined feedlot or a quarantined pasture, or that have been in contact with brucellosis reactors in marketing channels for a period of 24 hours or more, or for a period of less than 24 hours if the reactor has recently aborted, calved, or has a vaginal or uterine discharge. Brucellosis suspect cattle and bison are also considered to be exposed.

Brucellosis exposed swine

Swine that are part of a known infected herd or that have been in contact with brucellosis reactors in marketing channels for periods of 24 hours or longer, or for periods of less than 24 hours if the reactor has recently aborted, farrowed, or has a vaginal or uterine discharge. These animals are considered exposed regardless of the blood test results. Brucellosis suspect swine are also considered to be exposed. Brucellosis exposed swine must be placed under quarantine and restricted pending slaughter or pending testing after being returned to the herd of origin.

Cattle

All dairy and beef animals (genus Bos) regardless of age or gender.

Certificate

An official document issued by a Veterinary Services representative, State representative, or accredited veterinarian at the point of origin of a shipment of cattle or bison, which shows all of the following:

- o the official eartag number for each animal, or each individual animal's registration tattoo, registration brand, or the registration number of a breed association recognized by Veterinary Services,
- o the number of animals covered by the document,
- o the purpose for which the animals are to be moved,
- o the points of origin and destination,
- o the consignor, and
- o the consignee.

Ownership brands may be used as identification on certificates for cattle being shipped interstate to states where official tests for brucellosis and other official tests are not required, provided the ownership brands are registered with the official brand recording agency in the State of origin and the cattle are accompanied by official brand inspection certificates.

Certified Brucellosis-Free Herd

A herd of cattle or bison which has qualified for and has been issued a Certified Brucellosis-Free Herd certificate signed by both the appropriate State animal health official and by the Veterinarian in Charge.

The Certified Brucellosis-Free Herd status is valid for 12 months, unless evidence of brucellosis is disclosed, or the herd participates in a whole herd vaccination plan. In the last case, the herd status is suspended until post-vaccination testing confirms the herd's negative standing.

Chief Staff Veterinarian, Domestic Program Support

The veterinarian in Veterinary Services, APHIS, USDA, who is responsible for staff field support activities associated with the Federal government's participation in the Cooperative State-Federal Brucellosis Eradication Program.

Class A State or Area

A State or an area within a State that meets the classification standards for Class A status and that has been certified as fulfilling the requirements of

this status on initial classification or reclassification by the State animal health official, by the Veterinarian in Charge, and by the Deputy Administrator. Two of the requirements for Class A status are that the infection rate for cattle herds may not exceed 0.250 percent during the previous 12 months and that the adjusted market cattle (MCI) reactor prevalence rate for the previous 12-month period may not exceed 0.100 percent.

Class B State or Area

A State or an area within a State that meets the classification standards for Class B status and that has been certified as fulfilling the requirements of this status on initial classification or reclassification by the State animal health official, by the Veterinarian in charge, and by the Deputy Administrator. Two of the requirements for Class B status are that the infection rate for cattle herds may not exceed 1.500 percent during the previous 12 months and that the adjusted market cattle (MCI) reactor prevalence rate may not exceed 0.300 percent during the previous 12 months.

Class C State or Area

A State or an area within a State that meets the classification standards for Class C status and that has been certified as fulfilling the requirements of this status on initial classification or reclassification by the State animal health official, by the Veterinarian in charge, and by the Deputy Administrator. Two of the several criteria considered under Class C status are that the infection rate for cattle herds during the previous 12 months exceeded 1.500 percent and that the adjusted market cattle (MCI) prevalence rate for the previous 12 months exceeded 0.300 percent. If a State or area exceeds either of these criteria, it would be cause for immediate classification as a Class C State or area.

Class Free State or Area

A state or an area within a State that meets the classification standards for Class Free status and that has been certified as fulfilling the requirements of this status on initial classification or reclassification by the State animal health official, by the Veterinarian in charge, and by the Deputy Administrator. Included among the requirements for Class Free status are that the cattle herds in the State or area within the State must remain free from infections with field strains of Brucella for 12 months or longer. All cattle herds in which field strain brucellosis was known to exist must be legally released from quarantine before the area can be certified. In addition, all herds of other species of domestic livestock in which field strain brucellosis has been found or suspected must be tested negative, slaughtered, or quarantined leaving no known focus of infection in any domestic species uncontrolled at the time of certification. The adjusted market cattle (MCI) reactor prevalence rate for the previous 12 months may not exceed 0.050 percent

Commission firm

A person, partnership, or corporation that buys and sells livestock as a third party and reports details of the transactions to the seller and/or to the buyer. The term includes any person or organization whether or not a fee is charged for the service.

Commission sales

Commission sales are those that are conducted by a third party, who reports details of the transaction to either the seller, the buyer, or both.

Cooperative State-Federal Brucellosis Eradication Program

The Cooperative State-Federal Brucellosis Eradication Program, also referred to as the Brucellosis Eradication Program or simply the Program for convenience in this publication, is administered under a Memorandum of Understanding between the appropriate agency in each of the States and the United States Department of Agriculture. This Program includes all of the activities associated with detecting, controlling, and eliminating brucellosis from domestic livestock in the United States. The minimum standards for operating a Cooperative State-Federal Brucellosis Eradication Program within a State are contained in the Brucellosis Eradication Uniform Methods and Rules. The Uniform Methods and Rules (UMR) are reviewed by representatives of the livestock industry and the appropriate State and Federal agencies annually and are revised as needed by the United States Department of Agriculture.

Dairy cattle

Bovine animals of a recognized dairy breed.

Dealer

1. Any person who engages in the business of buying and/or selling livestock in commerce either on his own account or as an employee or agent of the seller or buyer;
- or
2. any person who engages in the business of buying and/or selling livestock in commerce on a commission basis.

The term dealer does not include a person who buys or sells livestock as part of his own bona fide breeding, feeding, dairy, and/or beef operation or who receives livestock exclusively for immediate slaughter on his own premises and who does not engage in the business of buying, selling, trading, or negotiating the transfer of livestock.

Deputy Administrator

The Deputy Administrator, Veterinary Services, Animal and Plant Health Inspection Service, United States Department of Agriculture, or any other Veterinary Services official to whom the appropriate authority has been delegated.

Designated epidemiologist

An epidemiologist who has demonstrated the knowledge and ability to perform the functions required under the standards of the Uniform Methods and Rules and who has been selected for this position by the State animal health official and the Veterinarian in Charge. The regional epidemiologist and the Veterinary Services brucellosis staff must concur in the selection and appointment of the designated epidemiologist.

Direct movement

Transported animals must not be unloaded en route to final destination, except for slaughter cattle or bison which may only be unloaded at one approved intermediate handling facility while en route to slaughter.

Epidemiologist

A veterinarian who has received a master's degree in epidemiology or who has completed a course of study in epidemiology sponsored or approved by Veterinary Services.

Epidemiology

A branch of medical science that deals with the incidence, distribution, and control of disease in the animal population.

Feedlot--cattle and bison

A confined drylot area for finish feeding of cattle and bison on concentrated feed with no facilities for pasturing or grazing. Only animals that have met all of the required testing provisions at origin and destination are allowed in these feedlots. The feedlot is considered to be a herd and must be handled like any other herd if brucellosis is suspected or diagnosed.

Feedlot--swine

A confined drylot area for finishing feeding swine on concentrated feed with no facilities for pasturing or grazing. All swine in feedlots must be held apart from all breeding swine.

Finished fed cattle

Cattle that have been on feed for a sufficient period of time to achieve the flesh condition desired by the slaughter establishments.

First Point Testing

Subjecting all test-eligible cattle which are moving within trade or marketing channels to an official test for brucellosis at the first point of concentration. Points of concentration are livestock markets, specifically approved stockyards, buying stations, assembly points, or feedlots receiving cattle directly from farms.

Herd

1. All animals of the same species, such as cattle, bison, or swine, under common ownership or supervision that are grouped on one or more parts of any single premises (lot, farm, or ranch);

or

2. all animals of the same species under common ownership or supervision on two or more premises that are geographically separated, but on which the animals have been interchanged or where there has been contact among the animals on the different premises. Contact between animals of the same species on the different premises will be assumed unless the owner establishes otherwise and the results of the epidemiologic investigation are consistent with the lack of contact between premises;

or

3. all animals of the same species on common premises, such as community pastures or grazing association units, but owned by different persons. Other groups of animals owned by the persons involved which are located on other premises are considered to be part of this herd unless the epidemiologic investigation establishes that animals from the affected herd have not had the opportunity for direct or indirect contacts with animals from that specific premises.

Quarantined feedlots and quarantined pastures are not considered to be herds.

Herd blood test

1. Cattle or bison. The herd blood test must include all cattle or bison six months of age and older, except steers, spayed heifers, official calfhood vaccinates of the dairy breeds under 20 months of age, and official calfhood vaccinates of bison or beef breeds under 24 months

of age. Twenty-four months of age is evidenced by the first pair of fully erupted permanent incisor teeth. Official calfhood vaccinated cattle or bison under these ages must be included in the herd test if they are parturient (springers) or have already calved.

2. Swine. The herd blood test must include all breeding swine six months of age and older. All swine being held for feeding, segregated from and without physical contact with breeding swine, are exempt from herd test requirements.

Herd known to be affected--cattle and bison

Any herd in which any animal has been classified as a brucellosis reactor, and the herd has not been released from quarantine.

Herd known to be affected--swine

A herd in which any of the swine discloses a standard tube agglutination test reaction of complete 1:100 or higher or is positive on the standard card test and the herd has not been released from quarantine. The herd may be reclassified by a designated epidemiologist on the results of additional diagnostic procedures, if fewer than five percent of the animals are reactors.

Herd not known to be affected

Any herd in which no brucellosis reactor has ever been found or any herd in which one or more animals have been classified as brucellosis reactors but which has been released from quarantine since that date.

Herd of origin of cattle and bison

Any herd of cattle or bison or any farm or other premises where the cattle or bison were born or where they have been kept for four months or more before the date of shipping, provided cattle or bison from other premises have not been assembled on the farm or premises within four months before the date of shipment. For the purposes of the UMR, herd of origin has the same meaning as place of origin, premises of origin, and farm of origin.

Herd of origin of swine

Any herd or premises on which swine are farrowed and raised or premises on which those swine were maintained for a period of 30 days or more immediately before being shipped.

Individual herd plan (Also see approved action plan)

A written herd management and testing plan that is designed by the herd owner, the owner's veterinarian if requested, and a State or Federal veterinarian, to

control and eradicate brucellosis from an affected herd. A similar plan for determining the true status of suspects and for preventing exposure to brucellosis within the herd is also within the meaning of the term. These plans must incorporate the most appropriate veterinary and herd management procedures to control the spread of brucellosis within the herd and thereby eradicate the disease from the herd.

Livestock market

A place where livestock are assembled for sale. The animals may be sold by auction, consignment for commission, or by other means of transferring ownership. For the purposes of the UMR, the term livestock market includes both Specifically Approved Stockyard and State approved livestock market.

Market Cattle Identification (MCI) test cattle

Market cattle identification test cattle are all cows and bulls two years of age and older slaughtered at a recognized slaughter establishment, and all test-eligible cattle moving through livestock markets or stockyards. Also, they are those test-eligible cattle assembled at farms or ranches, which are being made ready for movement to markets, stockyards, slaughter establishments, or other sales, such as consignment or dispersal sales. These cattle are to be identified by eartag and/or backtag to the herd of origin before being moved or at the first point of concentration, such as a livestock market or slaughter establishment, that they reach in marketing channels.

Market Swine Test (MST) animals

Sows, boars, and stags moving in trade through livestock markets, stockyards, buying stations, or to slaughter establishments and those sows, boars, and stags assembled at farms or ranches that are being readied for immediate movement to markets, stockyards, or slaughter establishments or to other sales.

Official brand inspection certificate

A certificate issued by an official brand inspection agency in any State in which these certificates are required for moving livestock.

Official brand recording agency

The duly constituted body elected or appointed that is delegated or granted authority by a State to administer laws, regulations, ordinances, or rules pertaining to the brand identification of livestock.

Official eartag

A Veterinary Services approved identification eartag (metal, plastic or other) that conforms to the nine-character alpha-numeric National Uniform Eartagging

System. It uniquely identifies each individual animal with no duplication of the alpha-numeric identification, regardless of the materials or colors used. The term includes the special orange-colored eartag series used to identify calfhood vaccinates.

Official seal

A serially numbered, metal or plastic strip consisting of a self-locking device on one end and a slot on the other end, that forms a loop when the ends are engaged. An official seal is tamperproof and cannot be reused if opened. It is applied to the doors of the vehicle by a representative of the Veterinarian in Charge or the State animal health official. A serially numbered, self-locking button that cannot be reused may be substituted for the metal or plastic strip type of seal.

Official vaccinate (adult)

A bovine or bison female that, as part of a herd that was approved for whole herd vaccination, was inoculated subcutaneously with an approved Brucella vaccine at an age older than that permitted for calfhood vaccination. The animal was inoculated by a State or Federal representative or an accredited veterinarian using the approved procedure. The animal must have been tested negative within 10 days before vaccination. At vaccination, the animal must have been properly identified as an adult vaccinate and must have been reported on the appropriate form to the State or Federal animal health agency in that State.

Official vaccinate (calfhood)

A bovine or bison female that as a calf was inoculated subcutaneously with an approved Brucella vaccine between the appropriate age limits by a State or Federal representative or an accredited veterinarian using the approved vaccination procedure. The animal must have been properly identified as a vaccinate by official eartag and vaccination tattoo and must have been reported on the appropriate certificate to the appropriate State or Federal animal health agency for that State.

Parturient

Visibly prepared to give birth or within two weeks of giving birth.

Permit

An official document (VS Form 1-27 or comparable State form) that is issued by a State or Federal representative or by an accredited veterinarian. The permit is required to accompany all brucellosis reactors and those brucellosis exposed cattle and bison that are being moved either with or without an official seal during their movement to the specified destination. (See Chapter 1, Part II, 5, Procedures for Moving Restricted Cattle, Bison, and Swine.)

Permit for entry

A pre-movement authorization for cattle and bison to enter other States or areas. The permit for entry is obtained from the animal health official of the State of destination and will state the conditions under which movement may be made. It may be oral or written. (See Chapter 1, Part II, 5, Procedures for Moving Restricted Cattle, Bison, and Swine.).

Person

Any individual, corporation, company, association, firm, partnership, society, or joint stock company or other legal entity.

Postparturient

Having already given birth.

Quarantined feedlot

A confined area under State quarantine that has been approved by the State animal health official and the Veterinarian in Charge and is maintained for feeding cattle and bison of unknown or exposed status, with no provisions for pasturing or grazing. All cattle and bison, except steers and spayed heifers, leaving a quarantined feedlot must go to an approved slaughter establishment for immediate slaughter or to another quarantined feedlot. All cattle and bison in a quarantined feedlot are considered to be exposed to brucellosis.

Quarantined pasture

A designated confined grazing area under State quarantine, approved by the State animal health official, Veterinarian in Charge and the Deputy Administrator, which is established to use available forage for cattle or bison of unknown or exposed status. The cattle or bison must originate from the State in which the quarantined pasture is located. A quarantined pasture cannot be approved for periods exceeding ten months. All cattle and bison in a quarantined pasture are considered to be exposed to brucellosis.

Recognized slaughter establishment

Any slaughter establishment operating under the provisions of the Federal Meat Inspection Act (21 U.S.C.601 et seq.) or a State meat inspection act.

"S" Brand Permit

An official document that may be required for certain animals that are moved to a quarantined feedlot, a quarantined pasture, a slaughter establishment, or to an approved stockyard for sale for movement to a slaughter establishment. Its

purpose is to control the movement of untested test-eligible cattle and bison and exposed cattle and bison to restricted destinations. (See Chapter 1, Part II, 5, Procedures for Moving Restricted Cattle, Bison, and Swine.)

"S" branded cattle or bison

Exposed or untested test-eligible cattle or bison that have been identified by branding the letter "S" with a hot iron at least 5cm (2 x 2 inches) in size on the left jaw or high on the tailhead (over the fourth to the seventh coccygeal vertebrae).

Sow

A female swine that has given birth to one or more pigs or that is parturient.

Specifically approved stockyard (see Livestock Market, State approved market)

A stockyard specifically approved for receiving brucellosis restricted cattle or bison. A specifically approved stockyard may be approved to handle all classes of cattle and bison including brucellosis reactor or brucellosis exposed cattle or swine.

State

Any State, the District of Columbia, Puerto Rico, the Virgin Islands of the United States, or Guam.

State animal health official

The State official responsible for disease control and eradication programs affecting livestock and poultry.

State-approved livestock market

Any livestock market that has been approved by the State to handle cattle, bison, and/or swine, under conditions required by the brucellosis eradication program.

State or Federal representative

A veterinarian or other person employed in animal health work by a State or political subdivision of the State or by Veterinary Services. This person is authorized by the State or political subdivision to perform animal health activities under a Memorandum of Understanding with the United States Department of Agriculture.

Successful traceback of Market Cattle Identification (MCI) reactors

A successful traceback of MCI reactors occurs when the herd of origin, as defined, is located and a herd blood test is conducted when necessary. When all animals at the premises of origin were sold for slaughter a successful traceback can also be claimed. Tracebacks to dealers, commission firms or other intermediary points are not considered successful, unless all possible herds of origin are located and the herds are tested.

Successful traceback of Market Swine Test (MST) reactors

A traceback is successful when a herd of origin of a market swine test reactor is located and the herd is tested. If a significant proportion of the herd has been dispersed, the herds of destination of these dispersed animals must be located and the brucellosis status of these dispersed animals established by blood test. When all animals at the premises of origin were sold for slaughter, a successful traceback can also be claimed. However, when not all animals were sold for slaughter, then the animals sold for return to farms must be traced and tested. Tracing to dealers, feedlots, commission firms, and similar intermediate points are not considered successful tracebacks of reactors.

Test-eligible cattle and bison

This term includes all cattle and bison 18 months of age and over (as evidenced by the loss of the first pair of temporary incisor teeth), except steers, spayed heifers, official calfhood vaccinates of the dairy breeds under 20 months of age, and official calfhood vaccinates of bison or beef breeds under 24 months of age (24 months of age is evidenced by the first pair of fully erupted permanent incisor teeth). Official calfhood vaccinates that are parturient (springers) or postparturient are test-eligible regardless of age.

Untested test-eligible cattle and bison

Test eligible cattle and bison that have not been tested for brucellosis to fulfill brucellosis movement requirements.

Validated Brucellosis-Free Herd

A herd of swine that has qualified for and has been issued a Validated Brucellosis-Free Herd certificate signed by the State animal health official and the Veterinarian in Charge. The Validated Brucellosis-Free Herd status is valid for 12 months, unless evidence of brucellosis is found.

Validated Brucellosis-Free State or Area

A State or an area within a State that meets the classification standards for stage III and that has been validated by the State animal health official, by the Veterinarian in Charge, and by the Deputy Administrator as fulfilling the

requirements of this status on initial classification or reclassification.

Veterinarian in Charge

The veterinary official of Veterinary Services, Animal and Plant Health Inspection Service, United States Department of Agriculture, who is assigned by the Deputy Administrator to supervise and perform the official animal health work of the Animal and Plant Health Inspection Service in the State concerned.

Veterinary Services

Veterinary Services, Animal and Plant Health Inspection Service, United States Department of Agriculture.

Veterinary Services representative

A veterinarian or other person employed by Veterinary Services, Animal and Plant Health Inspection Service, United States Department of Agriculture, who is authorized to perform the activities involved.

Whole herd vaccination

The vaccination of all female cattle or bison over four months of age (including animals older than the age for official calfhood vaccination), when the entire herd is authorized by the State animal health official and by the Veterinarian in Charge to be vaccinated with an approved reduced dose Brucella abortus Strain 19 vaccine.

PART II PROCEDURES

1. Administrative Procedures

A. Supervision of the Cooperative State-Federal Brucellosis Eradication Program

The Cooperative State-Federal Brucellosis Eradication Program must be supervised by full-time animal health veterinarians employed by the State or the Federal Government.

B. Entering Premises

Persons working on the Brucellosis Eradication Program must be authorized by the State to enter premises to carry out program procedures. While on those premises, they must use sanitary procedures to minimize the risk of physically transmitting the disease to other premises.

C. Providing Services to Livestock Owners

Program services may be rendered without expense to the livestock owner; however, owners are responsible for handling their animals. Program administrators may contract with accredited veterinarians, paraprofessionals, other State and Federal agencies, or with the management of privately owned firms as needed, to assist State and Federal animal health personnel in collecting blood, milk, or tissue samples, in identifying animals, and in performing other specified activities.

D. Reporting Brucellosis Activities

All brucellosis activities that are conducted privately, or under agreements with program officials--such as performing vaccinations or serologic tests for brucellosis--must be reported immediately to cooperating agencies and to the herd owner.

E. Notifying the Community of Brucellosis Affected Herds, Quarantined Feedlots and Quarantined Pastures

State or Federal program officials will notify herd owners in the immediate community about the presence of cattle and bison herds that have been placed under quarantine for brucellosis. Program officials will also notify herd owners in the immediate community when they approve the establishment of quarantined feedlots and quarantined pastures. Herd owners are to be notified by means of an educational letter delivered in person or by mail within 30 days of the date quarantines are issued. The purpose of this notification is to emphasize to owners the importance of

taking appropriate actions to protect their cattle and bison against the possible spread of brucellosis as the result of the presence of an affected herd in their community. When the herd quarantine is released, or the approval of the quarantined feedlot or the quarantined pasture is terminated, the herd owners are also to be notified within 30 days by an educational letter delivered in person or by mail.

F. Herd Depopulation

State or Federal program officials will review cattle and bison herds with a high rate of brucellosis infection or chronic infection of long duration to determine the desirability of depopulating the herd with indemnity to the owner. In States that previously had been free of brucellosis, all affected herds must be reviewed for possible depopulation with indemnity in order to reduce the risk of spreading the disease to other herds. Depopulation is the method of choice in handling infected commercial swine herds.

G. Dealers--Registration and Recordkeeping

The following dealers (individuals or other legal entities) of cattle and/or bison must be registered or licensed with the appropriate State agency:

- o dealers who purchase, deal in, or sell cattle and/or bison;
- o dealers who act as commission representatives or brokers
- o dealers who operate and conduct an auction where cattle or bison are sold

These dealers must maintain records required by the licensing agency to make it possible for State authorities to trace back exposed and/or reactor animals to the herd of origin or other point of original infection.

1. Registering dealers --After giving due notice and opportunity for hearing to the dealer involved, the State agency must have the authority to deny an application for registration, or to suspend or cancel the registration, when the agency is satisfied of either or both of the following:
 - a. there is adequate evidence to establish that the dealer had the intent to violate or circumvent recordkeeping requirements of this section and/or other animal health regulations;
 - b. the dealer has repeatedly demonstrated an inability to keep records making it possible to trace back to the point of origin those exposed or reactor cattle or bison he has handled.

2. Keeping records --Each registered or licensed dealer must keep sufficient records on all test-eligible cattle or bison purchased for resale, to enable the State agency to satisfactorily trace back those animals to their herd of origin. The records must be kept for a minimum of two years.
3. Dealing with violations --Provisions must exist so that State animal health officials can institute any action at law or in equity that appears necessary to enforce compliance with dealer registration and recordkeeping requirements. This includes the authority to subpoena appropriate records and/or persons that allegedly violate these minimum standards. The appropriate State officials must also have authority to petition the local court that has venue for an order to enforce these subpoenas.
4. Reviewing laws and regulations --States with existing brand laws, rules, and/or regulations may not need to develop new laws and regulations governing dealer registration and recordkeeping if the exposed and/or reactor cattle and bison are being traced to their herd(s) of origin or point(s) of original infection. Representatives of the Chief Staff Veterinarian, Domestic Program Support, will evaluate the scope of the State brand inspection laws, rules, and regulations and their effectiveness in accomplishing the traceback objective. Based upon this review, the Chief Staff Veterinarian, Domestic Program Support, will determine if new laws or rules are needed to satisfy these objectives.

H. Exceptions to the Deadline(s)

Program officials must follow deadlines for the herd plan, investigation, and testing as specified in Chapter 2, Parts II, III, IV, and V, except when a designated brucellosis epidemiologist determines that there are extenuating circumstances. The extenuating circumstances must make it impossible to meet the deadline established for a particular herd. The designated epidemiologist must immediately set a new deadline in consultation with the herd owner or his representative, to accomplish the required testing at the earliest opportunity. The new deadlines must be consistent with the principles of brucellosis eradication.

I. Administrative Review of Program Activities and Progress

An administrative review of a State's brucellosis program may involve any or all of the following:

1. Veterinary Services personnel will conduct ongoing reviews at the local and national levels by receiving and examining routine written monthly, annual, and other statistical and narrative reports that have been

prepared and submitted by State and/or Federal animal health officials in each of the States;

2. the Chief Staff Veterinarian, Domestic Program Support, will monitor the results of existing State policies and procedures for controlling and eradicating brucellosis by examining factors such as the prevalence of infection in that State;
3. representatives of the Chief Staff Veterinarian, Domestic Program Support, evaluate the information provided by the various States in special reports regarding the authorities and the policies for implementing the various minimum standards of the Uniform Methods and Rules;
4. regional directors, regional epidemiologists, and staff personnel of Veterinary Services will visit the various States to observe program procedures and to make general or specific program evaluations; and
5. special evaluation teams comprised of several individuals representing State, Federal, and/or industry and academic interests will make visits to designated States in order to make limited or comprehensive reviews of the brucellosis program.

J. Appointing Designated Epidemiologists

A designated epidemiologist must be selected jointly by the cooperating State animal health official and the Veterinarian in Charge, the regional epidemiologist, and the brucellosis staff of the Domestic Program Support, Veterinary Services. Only those persons with the prerequisite training, experience, and interest will be appointed to this position.

2. Procedures for Vaccination

A. Whole Herd Vaccination Plan (Adult Vaccination)

Under this plan, a herd blood test is followed by vaccination of the nonreacting female cattle and bison. The animals are to be vaccinated within 10 days after the blood test is completed. All animals included on the blood test must be identified with official eartags or other UM&R approved identification. All brucellosis reactors must be isolated until removed from the premises. A whole herd vaccination plan will only be used in Class Free States or areas if the State animal health official and the Deputy Administrator, Veterinary Services, Animal and Plant Health Inspection Service, specifically approve it on a herd-by-herd basis.

1. Affected herds --In affected herds, the individual herd plan may include whole herd vaccination in addition to other recognized procedures for controlling and eliminating the disease. Whole herd vaccination may be initiated only when the herd owner receives written permission from the State and Federal officials directly responsible for program activities in the State in which the herd is located. All animals that are vaccinated as adults under these circumstances must be identified using an official eartag and a brand or tattoo as described in Section C, Identifying Vaccinates. The initial herd blood test following whole herd vaccination should be done in two months or as early as possible after two months in order to make it easier to eliminate field strain infection. (See Chapter 1, Part II, Section 7, E, 1, Classification of Cattle and Bison--Serologic Tests.) Test and slaughter procedures for affected herds must resume within six months after the initial whole herd vaccination. Testing will take place at the intervals agreed to in the individual herd plan. During the 48 months following the initial whole herd vaccination, replacement animals that have passed a negative test within 10 days before entering the herd may be adult vaccinated if this is needed and if it is included in the individual herd plan.

Beef Cattle and Bison Herds--Beef cattle and bison herds that are affected with brucellosis and that have participated in a whole herd vaccination plan ("AV" herd) may be released from quarantine after at least two negative herd blood tests. The first test must be 30 days or more, and the second test 180 days or more, after all reactors have been removed from the herd. Any intervening tests of animals in these herds must also be negative. These requirements are the same as those for release of quarantine in other brucellosis affected herds. A beef or bison herd participating in the whole herd vaccination plan will be considered negative if all animals in the herd show titers of less than 1+ at 1:40 on the CF test or less than +25 on the rivanol test. All animals in the herd must meet both the CF and rivanol test criteria if

both tests are used. An additional herd blood test is required six months or more after the herd has been released from quarantine. Beef cattle or bison sold from herds under the whole herd vaccination plan between the date of release from quarantine and the six-month postquarantine retest must be tested between 120 and 180 days after moving to the new premises. If, at the time these animals are sold, at least six months have elapsed since the herd was released from quarantine, the animals may be tested on the new premises as early as 45 days after arrival. Additional restrictions, if any, on moving beef cattle or bison from herds awaiting their six month postquarantine retest are to be adopted by the various States as needed.

In all herd blood tests, a presumptive test may be performed in conjunction with other official tests on each animal to establish a negative status. The card, and CF and/or rivanol test are to be performed on all presumptive test-positive animals. Animals that are positive on the card, CF, or rivanol tests, and that are not identifiable as official vaccinates, are to be classified as reactors.

In herds eligible for release from quarantine, official vaccinates that are positive on the card test or that have a titer between 2+ at 1:10 and 4+ at 1:20 on the CF test must be classified as suspects. These animals must be placed under individual animal quarantine and must be restricted until they are negative on the card test and less than 2+ at 1:10 on the CF test.

Dairy Herds--All of the requirements for beef and bison herds also apply to dairy herds participating in a whole herd vaccination plan ("AV" herd). In addition, dairy herds must either be negative on the last herd brucellosis ring test or each adult vaccinated cow in lactation must be tested using the serially diluted brucellosis ring test procedures and have a titer of less than 1:16 in each lactating quarter before the herd can be released from quarantine. Any "AV" dairy herd in this plan that is released from quarantine but that continues to be suspicious on the herd brucellosis ring test must be evaluated by the designated epidemiologist and monitored with further testing whenever necessary to ensure that there is no evidence of infection with field strains of *Brucella*.

2. Herds not known to be affected but not Certified Brucellosis-Free--
Persons who own cattle or bison herds that are at high risk of becoming infected with brucellosis and that are not Certified Brucellosis-Free may also request whole herd vaccination. An individual herd plan that specifies the whole herd vaccination procedures to be used must be developed and agreed to. The plan also should include other recognized procedures for preventing the introduction of brucellosis into the herd and for controlling its

spread if it does occur. Whole herd vaccination may be initiated only if the owner receives written permission from the State and Federal officials directly responsible for program activities in the State in which the herd is located. As part of this plan, all eligible calves must be calfhood vaccinated and identified as described in Section, below, Identifying Vaccinates.

All female cattle or bison vaccinated as adults under these circumstances must be identified using an official eartag and a brand or tattoo as described in Section C, below. After whole herd vaccination, only the adulthood vaccinates will be placed under quarantine. A herd blood test must be performed no later than six months after the initial whole herd vaccination (except as provided by Chapter 1, Part II, 1, H, Exceptions to Deadlines). After whole herd vaccination, individual cattle and bison that are negative on the standard card test and that are from herds not known to be affected may move before the herd is released from quarantine if they meet the other requirements for intrastate or interstate movement and if they were serologically negative at the time of vaccination. The entire herd will be eligible for release from quarantine with a negative test 120 days or more after vaccination.

Dairy herds--All of the above requirements will apply to dairy herds participating in a whole herd vaccination plan ("AV" herd). In addition, dairy herds must either be negative on the last herd brucellosis ring test or each adult vaccinated cow in lactation must be tested using the serially diluted brucellosis ring test procedures and have a titer of less than 1:16 in each lactating quarter before the herd can be released from quarantine. Any "AV" dairy herd in this plan that is released from quarantine but that continues to be suspicious on the herd brucellosis ring test must be evaluated by the designated epidemiologist and monitored with further testing whenever necessary to ensure that there is no evidence of infection with field strains of Brucella.

3. Certified Brucellosis-Free Herds --Under this plan, owners of Certified Brucellosis-Free Herds in an area of high risk of the herd's becoming infected with brucellosis may request whole herd vaccination. The purpose is to establish an immediate high level of resistance to exposure to field strains of Brucella abortus. These procedures may be initiated only when the herd owner receives written permission from the State and Federal officials directly responsible for program activities in the State in which the herd is located.

An individual herd plan must be developed and agreed upon before whole herd vaccination is used. The plan should also include other recognized procedures for preventing the introduction of brucellosis into the herd and for controlling its spread if it does occur. The

following whole herd vaccination procedures apply to Certified Brucellosis-Free herds at high risk:

- a. Within 10 days before the herd is vaccinated, a herd blood test must be completed. If all tests are negative, continue to treat the herd as a Certified Brucellosis-Free Herd at high risk (Paragraph b, below). If any cattle are reactors, treat the herd as an affected herd and follow the same rules as for known affected herds (Paragraph 1, Affected Herds).
- b. In Certified Brucellosis-Free Herds with negative serologic tests, but at high risk, all female cattle vaccinated as adults under these circumstances must be identified with an official eartag and a tattoo as described in Section C below. As part of this plan, all eligible calves must be calfhood vaccinated and identified as described in Section C below. After whole herd vaccination, place only those cattle vaccinated as adults under quarantine. The individual herd plan shall include provisions for the herd to be tested within 180 days following vaccination, however, upon written request by the herd owner to the Area Veterinarian in Charge and State Veterinarian the time of the first post-vaccination herd test may be extended to coordinate it with recertification requirements. The herd must be retested at intervals of 30 days or more after the first test. The herd must continue to be retested until two negative herd tests are obtained. The first negative herd test must be at least 30 days after the last reactor, if any, is removed, and the second negative herd test must be at least 180 after the removal of the last reactor from the herd. Any intervening tests of animals in these herd also must be negative. Certified Brucellosis-Free Herd status is suspended while the herd remains under quarantine and its Certified Brucellosis Free status is reinstated when the herd is released from quarantine, provided infection with field strains of *Brucella* has not been diagnosed in the herd. While the herd is under quarantine, individual cattle that are vaccinated as adults in these Certified Brucellosis-Free Herds and that are negative on the standard card test may move without restriction.

Dairy herds--All of the above requirements will apply to dairy herds participating in a whole herd vaccination plan ("AV" herd). In addition, dairy herds must either be negative on the last herd brucellosis ring test or each adult vaccinated cow in lactation must be tested using the serially diluted brucellosis ring test procedures and have a titer of less than 1:16 in each lactating quarter before the herd can be released from quarantine. Any dairy herd in this plan that is released from quarantine but continues to be suspicious on a herd brucellosis ring test must be evaluated by the designated epidemiologist and monitored with further testing

whenever necessary to ensure that there is no evidence of infection with field strains of Brucella.

B. Official Vaccinates

1. Official calfhood vaccinate --To be an official calfhood vaccinate, the vaccinated bovine or bison calf must be:
 - o female,
 - o vaccinated with an approved Brucella abortus vaccine,
 - o vaccinated by a State or Federal animal health representative or an accredited veterinarian,
 - o permanently identified as a calfhood vaccinate as described in Subsection C below, and
 - o reported at the time of vaccination by submitting a completed VS Form 1-24 or VS Form 1-26 or comparable form to the appropriate State or Federal animal health agency in that State.

In addition, an official calfhood vaccinate must be:

- a) - vaccinated as a calf of any cattle breed or bison between four months and one year of age (120 through 365 days), and
 - given a two ml dose subcutaneously containing at least three billion and not more than 10 billion live Brucella abortus Strain 19 organisms. (The optimum dose is five billion live organisms administered while the calf is at the optimum age of five months, or
 - b) vaccinated as a calf of any cattle breed or bison vaccinated before December 31, 1984 that met the age and vaccine dose requirements for official vaccination in the State where it was located at the time of vaccination.
2. Official adult vaccinate --To be an official adult vaccinate, the vaccinated animal (cattle or bison) must be:
 - o part of a herd approved for whole herd vaccination at the time of vaccination,
 - o female cattle or bison vaccinated at an older age than the maximum age approved for calfhood vaccination,
 - o tested negative within 10 days before vaccination,

- o vaccinated subcutaneously with an approved 2 ml dose of Brucella abortus Strain 19 vaccine containing between 300 million and one billion live organisms. The optimum dose is 500 million live organisms. If vaccinated before August 15, 1983, the vaccine must have contained between 300 million and three billion live organisms.
- o vaccinated by a State or Federal animal health representative or by an accredited veterinarian as instructed by the State animal health official and the Veterinarian in Charge,
- o identified as an official adult vaccinate as described in Section C, and
- o reported on the appropriate forms as an adult vaccinate to the State or Federal animal health agency for that State.

C. Identifying Vaccinates

1. Official calfhood vaccinates --Calfhood vaccinated animals must be permanently identified as vaccinates by tattoo and by official vaccination eartag. If the animal is already identified with an official eartag before vaccination, an additional official eartag is not required. Vaccination tattoos must be applied to the right ear. The tattoo will include the U.S. Registered Shield and "V", which will be preceded by a number indicating the quarter of the year and which will be followed by a number corresponding to the last digit of the year in which the vaccination was done. Official vaccination (orange) eartags must be applied to the right ear. The eartag will include the State prefix and a "V", followed by two letters and four numbers which will individually identify each vaccinated animal. States in which a complete series of official vaccination eartags (VAA through VZZ) is used in less than 15 years, will use a supplemental series of official vaccination eartags to avoid duplicating animal identification. The supplemental eartag series will use the 2 digit State prefix, followed by the letter "T" or "S", followed by 2 letters and 4 numbers. After 15 years, the State will again use the "V" series of official vaccination eartags. Consequently, beginning January 1985, the letters "V", "T" and "S" as the first letter in the 3 letter portion of the eartag are reserved for exclusive use in official vaccination eartags.

Individual animal registration tattoos or individual animal registration brands may be used for identifying animals in place of official eartags if the cattle are registered by breed associations recognized by Veterinary Services.

Official calfhood vaccinates are allowed to be retattooed by an accredited veterinarian designated by the State veterinarian, or by a Federal or State representative provided: a) the identification of the vaccinated animal(s) is verified by official records maintained in State or Federal offices; b) prior approval for retattooing is obtained from the State Veterinarian; and c) the retattooing produces the original tattoo given at the time of vaccination.

2. Official adult vaccinates --Animals that have been vaccinated over calfhood age as part of authorized whole herd vaccination plans must be permanently identified as vaccinates by the following procedures:
 - a. Brucellosis-affected herds and high risk herds not Certified Brucellosis-Free--Adult vaccinated cattle and bison in these herds must be identified by either an open-ended "V" hot brand on the right jaw or high on the hip near the tailhead, or by an official "AV" (adult vaccination) tattoo in the right ear. The "AV" in the tattoo is to be preceded by a number indicating the quarter of the year and followed by a number corresponding to the last digit of the year in which the vaccination was done. The brand or tattoo is in addition to the official eartag identification. If the cattle are registered by breed associations recognized by Veterinary Services, individual animal registration tattoos or individual animal registration brands may be used for identifying animals in place of official eartags. Large-numbered, unique, plastic bangle tags are recommended to be used in addition to the above identification and are to be correlated on test records with the official eartag.
 - b. Certified Brucellosis-Free herds at high risk--Adult vaccinated cattle in a certified Brucellosis-Free herd must be identified by an official "AV" (adult vaccination) tattoo in the right ear. The tattoo includes an AV preceded by a number indicating the quarter of the year and followed by a number corresponding to the last digit of the year in which the animal was vaccinated. In addition, the animal must have an official eartag. If the cattle are registered by breed associations recognized by Veterinary Services, individual animal registration tattoos or individual animal registration brands may be used for identifying animals in place of official eartags.

3. Testing Requirements

A. Cattle and Bison

1. Herd blood test --Herd blood tests must include all cattle and bison six months of age and older except steers, spayed heifers, official calfhood vaccinates of the dairy breeds under 20 months of age, and official calfhood vaccinates of beef breeds and bison that are under 24 months of age (as evidenced by the absence of the first pair of fully erupted permanent incisor teeth). However, official calfhood vaccinates that are parturient (springers) or postparturient must be included in the herd blood test regardless of age.
2. Herd blood test for release of quarantine and postquarantine test --The herd blood test that is performed to qualify a herd for release of quarantine or that is performed six to twelve months after a quarantine has been released must include all non-neutered cattle and bison six months of age and older, including cattle and bison that have been officially vaccinated for at least 6 months. The purpose for this requirement is to establish "baseline" titers for each of these animals so that when they are retested, the designated epidemiologist can evaluate the probability of their being infected with field strains of Brucella.
3. Market Cattle Identification (MCI) blood tests
 - a. Slaughter establishment--All cattle and bison (cows and bulls) two years of age and older are to be blood sampled at each recognized slaughter establishment. The blood samples must be tested for brucellosis.
 - b. Livestock markets, farms, or ranches--The following cattle and bison moving in trade channels or being readied for sale on farms and ranches must be blood sampled and tested as required in Chapter 2, Parts II, III, IV, and V: all cattle and bison 18 months of age and older (as evidenced by the loss of the first pair of temporary incisor teeth) except steers, spayed heifers, official calfhood vaccinates of the dairy breeds under 20 months of age, and official calfhood vaccinates of beef breeds and bison under 24 months of age (as evidenced by the absence of the first pair of fully erupted permanent incisor teeth). However, all cattle that are parturient (springers) or postparturient must be included as test-eligible cattle and bison regardless of age or vaccination status.
4. Other movements--The testing requirements for cattle or bison under other circumstances will be the same as those in Paragraph 3b above.

B. Swine

Herd blood test --the herd blood test must include all breeding swine six months of age and older. All swine that are being held for feeding purposes, and segregated from breeding swine, are exempt from the herd test requirement.

C. Identifying Tested Animals

1. Cattle and Bison

- a. Cattle and bison included in a herd blood test must be identified with an official eartag, an individual animal's registration tattoo, registration brand, or the registration number of a breed association recognized by Veterinary Services. Large-numbered, unique, plastic bangle tags may be used in addition if the bangle tags are correlated on the test records with the official eartag.
- b. Cattle and bison that are tested under the Market Cattle Identification program procedures are to be identified with the herd of origin by an official eartag and/or a USDA approved backtag before or at the first point of concentration in marketing channels.

2. Swine --All swine tested must be identified with an eartag, tattoo, or other permanent identification.

D. Requesting a Retest

Within three days after being notified of the results of an initial herd blood test, the owner may request an additional blood test on cattle and bison reactors, at the owner's expense. The request must be based on sound epidemiological evidence and all animals must remain under herd quarantine.

E. Retesting Affected Herds

Retests of affected cattle and bison herds must be conducted in accordance with an individual herd plan (Part II, T). Under routine conditions, retests are recommended at approximately 30-day intervals until the herd has passed at least one negative herd test after the last reactor has been removed and sold for slaughter. To qualify herds for release of quarantine, as indicated in Chapter 1, Part II, 6, H, Quarantine, a second negative herd blood test is necessary 180 days or more after the last reactor has been removed. Testing at 30-day intervals after the first negative herd test is strongly recommended to detect any additional infected cattle or bison as soon as possible, in order to minimize the spread of disease within the herd.

If herd plan 3 (Chapter 3, Part III) is selected for handling an infected swine herd, the above provisions will also apply.

4. Laboratory and Testing Procedures

A. Laboratories

Blood samples are to be tested for brucellosis only by cooperative State-Federal brucellosis laboratories or by persons who are authorized by program officials to conduct the standard agglutination tests, the Buffered Acidified Plate Antigen test (BAPA), or the card tests. All samples initially tested at other than cooperative State-Federal brucellosis laboratories must be promptly submitted by the person authorized to do the testing in the field to the cooperative State-Federal brucellosis laboratory where the results will be confirmed. Each State or region will have the laboratory capability to conduct the complement-fixation and rivanol tests, to culture samples for bacteria to determine the number of live organisms in an approved vaccine and for isolating *Brucella* from milk, blood, and tissues. A cooperative system will exist with States, universities, and industry to regularly review the training and performance of laboratory personnel and to assist laboratories in developing systems of continuing quality control for all laboratory tests and culturing procedures. State and regional laboratories will be evaluated by a review committee that includes qualified epidemiologists, at least once in each three-year period. Individuals conducting on-site testing will be monitored on a continuing basis and formally evaluated annually on their knowledge of accepted testing procedures.

B. Diagnostic Reagents for Brucellosis

Brucella antigens used for diagnosing or detecting brucellosis in domestic livestock will be distributed only to State and Federal animal health personnel and to accredited veterinarians who have been approved by State and Federal program officials to conduct specific tests.

C. Using the Tests and Recording Results--Cattle and Bison

1. Tests on Blood Serum

- a. Buffered Acidified Plate Antigen (BAPA) Presumptive Test--BAPA presumptive tests may be used to classify cattle and bison as negative. On test of affected herds, BAPA tests may be used in addition to other tests. The test is recorded as negative or positive. A test is positive when any agglutination is observed.
- b. Rapid Screening Test (RST)--The RST may be used as a presumptive test for classifying cattle and bison as negative when it is performed in Cooperative State-Federal brucellosis laboratories. The test is recorded as negative or positive. A test is positive when any agglutination is observed.

- c. Standard Card Test (standard sensitivity pH 3.8)-- Standard card test results are recorded as either negative or positive. The card test is to be used as an official test to classify cattle and bison as reactors only under the following circumstances:

- 1) When conditions and time are such that no other test is available; or
- 2) When the owner and/or his agent request it because of time or situation constraints; or
- 3) In livestock markets, when the State animal health official specifically designates the card test as the official test in livestock markets. No other test except the BAPA is to be used in livestock markets as an official test in those States where the card test has been given official test status in livestock markets; or
- 4) To classify cattle and bison as negative on surveillance samples collected at slaughter, on routine samples collected on farms, and on tests of suspicious and affected herds; or
- 5) To test Market Cattle Identification (MCI) test samples. Cattle and bison that are tested under the MCI program using an approved presumptive test (BAPA or RST) and that are found to be positive on the presumptive test must be retested using the standard card test or the standard plate or tube agglutination test. If there is no further testing, all samples that are positive on the standard card test or standard plate or tube agglutination test will be reported as MCI reactors and traced to the herd of origin. Nonvaccinated cattle that are positive on the standard card test must be reported as MCI reactors for the purposes of State or Area classification.

Results of the standard card test may be used to supplement the results of other tests conducted in the cooperative State-Federal brucellosis laboratory to give the designated epidemiologist additional information when classifying cattle and bison.

- d. Standard Tube Agglutination Test (STT) or Standard Plate Agglutination Test (SPT)--The blood titers of cattle and bison tested by the STT or SPT methods are interpreted in the following ways:

NOTE: These interpretations do not apply to officially adult vaccinated cattle or bison until after the STT or SPT titer

resulting from vaccination has reverted to negative.

Interpretation of STT and SPT Results

<u>Test Results</u>			<u>Test Interpretation</u>	
			<u>Nonvaccinated</u>	<u>Officially Vaccinated</u>
1:50	1:100	1:200		
-	-	-	Negative	Negative
I	-	-	Suspect	Negative
+	-	-	Suspect	Negative
+	I	-	Suspect	Suspect
+	+	-	Reactor	Suspect
+	+	I	Reactor	Suspect
+	+	+	Reactor	Reactor

(- = no agglutination; I = incomplete agglutination; + = complete agglutination).

- e. Rivanol test--The rivanol test is an official test when conducted in cooperative State-Federal brucellosis laboratories. Vaccinated cattle tested under the MCI program that show complete agglutination at dilutions of 1:25 or greater must be reported as MCI reactors for the purposes of State or Area classification.

Interpretation of Rivanol Test Results

<u>Test Interpretation</u>	<u>Test Results</u>	
	<u>Nonvaccinated</u>	<u>Officially Vaccinated</u>
Negative	I 1:25 or lower	I 1:25 or lower. However, within 5 months after adulthood vaccination of cattle or bison, a +1:50 or lower titer is considered to be negative.
Suspect	Not applicable	+1:25 to +1:50, provided the CF test is performed and is interpreted as negative or suspect, as described in Paragraphs g and h below.

Reactor	+1:25 or higher	+1:25 or higher provided the CF test is not performed or when the CF test result is interpreted as a reactor, or I 1:100 or higher on the Rivanol test regardless of CF test results.
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(- = no agglutination; I = incomplete agglutination; + = complete agglutination).

- f) Manual Complement-Fixation Test (CF)--The complement-fixation test is an official test when it is conducted at the cooperative State-Federal brucellosis laboratory using manual methods approved by National Veterinary Services Laboratories (NVSL).

The manual CF test is interpreted as follows:

Interpretation of Manual CF Test Results

Test Interpretation	Test Results	
	<u>Nonvaccinated</u>	<u>Officially Vaccinated</u>
		(Includes adulthood vaccinated cattle and bison beginning 2 months after vaccination)
Negative	1+ 1:10 or lower	1+ 1:10 or lower
Suspect	2+ 1:10 through 1+ 1:20	2+ 1:10 through 4+ 1:20
Reactor	2+ 1:20 or higher	1+ 1:40 or higher

Degree of Fixation of Complement

1+ = 25%	3+ = 75%
2+ = 50%	4+ = 100%

- g) Technicon Automated Complement-Fixation Test--The Technicon automated complement-fixation test is an official test when it is conducted at the cooperative State-Federal brucellosis laboratory using recognized methods.

Interpretation of the Technicon CF Test Results

<u>Test Interpretation</u>	<u>Test Results</u>	
	<u>Nonvaccinated</u>	<u>Officially Vaccinated</u> (Includes adulthood vaccinates beginning 2 months after vaccination)
Negative	N 1:5	+1:5 but N 1:10
Suspect	+ 1:5 but N 1:10	+1:10 but N 1:20
Reactor	+ 1:10 or higher	+1:20 or higher

(+ = fixation of complement observed; N = no fixation of complement observed)

h) Supplemental Tests--Supplemental tests are other tests that have been developed to aid in determining the presence or absence of blood components associated with field strains of *Brucella abortus*, Strain 19, nonspecific agglutinins, etc. Of these, only the card test is an official test and only when it is used as the sole test on a blood serum sample. Other procedures include ME (Mercaptoethanol), Coombs, HI (Heat Inactivation), APA (Acidified Plate Antigen) at various pH's, FA (Fluorescent Antibody), and ELA (Enzyme Labeled Antibody). Other supplemental tests may be added from time to time. Only the designated epidemiologist may use and interpret results of supplemental tests.

2. Semen plasma test --The semen plasma test is approved as an official test in bulls that are used for artificial insemination when the test is used in conjunction with an official test on blood serum. The classification of these animals must be based on the maximum agglutination titer of either the blood test or the semen plasma test.

3. Brucellosis ring tests (BRT)

a. Standard BRT

The standard brucellosis ring test is performed on pooled milk from dairy herds and represents all of the lactating cows that contributed milk to that sample.

The BRT samples are to be tested in approved laboratories

according to the standard test procedures published by Veterinary Services.

A modified brucellosis ring test procedure is available for use on pooled cream samples from dairy herds selling cream commercially.

1) Collection procedures

Samples of pooled milk from pipeline segments, bulk tanks, or milk cans are to be collected in at least four rounds per year at milk receiving stations, dairy processing plants, or individual dairy herds in each State. All commercial dairy herds will be tested in at least three of the four BRT rounds per year. States may increase the frequency of milk collections to improve the effectiveness of this surveillance method. Records should be kept for each collection point on each collection indicating how the samples were handled by the dairy plant after the samples were collected at the farm and before subsamples were collected for the BRT.

2) BRT test procedures and adjustments

The sensitivity of the BRT must be adjusted in large dairy herds for adequate surveillance. It must be adjusted according to the size of the herd to compensate for the dilution of milk from infected cattle with milk from large numbers of negative cattle. Increasing the sensitivity of the BRT increases the probability that brucellosis will be detected during the early stages of the disease in the herd.

The number of lactating cows represented in the composite herd milk sample has a significant influence on the sensitivity of the BRT. Consequently, the first step in conducting the BRT is to determine the approximate herd size in order to adjust the sensitivity of the test.

(i) Estimate approximate herd size by:

- o dividing the average milk production per cow in the State into the total pounds of milk that the dairy processing plant received from each herd; or
- o Reviewing recent blood test records for that herd and adjusting for the estimated number of nonlactating animals; or

- o asking owner, county agent, or dairyfield representative.
- (ii) Use fresh milk samples from herds milking 150 or more cows. Milk samples preserved with either formalin or potassium dichromate are acceptable for the smaller herds.
- (iii) Adjust the volume of the milk sample for herd size according to the following table:

<u>Number of lactating animals</u>	<u>Volume of test sample</u>
up to 150	1 ml of milk
150-450	2 ml of milk
451-700	3 ml of milk

In herds with more than 700 lactating cows, segment the herd into subunits (25 to 75 cows) and collect composite milk samples from each subunit from the milk pipeline. Herds with fewer than 700 lactating cows may also be segmented using the 1 ml test method for each 60-cow composite milk sample.

- (iv) Add 0.1 ml of gravity cream (2-4 drops) from brucellosis negative cows to each BRT tube regardless of the volume of milk used. Obtain gravity cream by using BRT negative milk from a herd that has at least 50 cows, in order to avoid individual differences in creaming quality. Do not pasteurize or clarify the milk used to obtain the negative cream.
 - (v) Add .03 ml (1 drop) of BRT antigen per test, regardless of the volume of milk.
 - (vi) Interpret test results as positive or negative. In the standard 1 ml ring test, the test is positive when the blue color of the cream layer is as dark as or darker than the skim portion of the milk. In the 2 ml and 3 ml tests, the test is positive when the blue color of the cream layer is darker than the skim milk portion of the sample.
- b. Serially diluted BRT--The serially diluted BRT procedure is used by designated epidemiologists to evaluate the level of antibodies in

the milk of individual cows. This test is commonly performed on separate milk samples from individual quarters. If a composite sample of milk from the individual quarters is used, it is important that equal quantities of milk from each quarter be added to the composite sample. Unprocessed raw milk from a herd of brucellosis negative cows must be used for diluting the test samples and for obtaining negative cream. The negative milk must be obtained from a herd with 25 or more cows, to compensate for variations among individual animals in the creaming factors of the test milk. This special test is often combined with bacteriologic attempts to culture brucella from aseptically collected milk samples.

D. Using the Tests and Recording Results--Swine

1. Tests on blood serum

- a. Card test--Card test results are classified as either negative or positive.
- b. Standard tube test--The blood titers of swine tested by the STT method are classified as follows:

If all of the following apply:

- 1) none of the animals on the test had titers greater than I 1:100;
- 2) this is not a retest of an infected herd; and
- 3) this is a complete herd test or an incomplete test of a validated herd,

then use the following:

1:25	1:50	1:100	
I	--	--	Negative
+	--	--	Negative
+	I	--	Negative
+	+	--	Negative
+	+	I	Negative

If one or more of the following apply:

- 1) one or more animals on the test had a titer greater than I 1:100;
- 2) this is a retest of an infected herd; or

3) this is an incomplete test of a herd of unknown status,
then use the following:

1:25	1:50	1:100	
I	--	--	Negative
+	--	--	Reactor
+	I	--	Reactor
+	+	--	Reactor
+	+	I	Reactor
+	+	+	Reactor

2. Semen plasma test --The semen plasma test is approved as an official test in boars used for artificial insemination, when used in conjunction with the card test and/or the standard tube test. The classification of these animals must be based on the maximum agglutination titer of either test.

5. Procedures for Moving Restricted Cattle, Bison, and Swine

A. Permits

1. Permit (cattle, bison, and swine) --An official document (VS Form 1-27 or comparable State form) issued by a Veterinary Services representative, State representative, or accredited veterinarian, which must accompany certain restricted animals. A permit does not include a "Permit for Entry" or "S" brand permit. The permit must list one of the following types of identifications for each animal:

- o official eartag, or
- o USDA backtag, or
- o if the animal is registered by a breed association recognized by Veterinary Services, the
 - individual animal registration number,
 - individual animal registration tattoo, or
 - individual animal registration brand.

It must list any reactor tag number(s), owner's name and address, location of origin and destination, number of animals covered, and the purpose of the movement. No diversion from the permitted destination is allowed. If a change in destination is desired or becomes necessary, a new permit must be obtained. The copies must be distributed as indicated on the permit.

2. "S" brand permit (cattle and bison) --A document which is required to accompany the movement of certain restricted animals, which shows:
 - o the origin,
 - o the destination,
 - o the number of restricted cattle and bison,
 - o the purpose of the movement,
 - o the USDA backtag numbers (when applied serially, only the beginning and the ending number need be recorded), and
 - o a statement certifying to the "S" brand identification.

It must be prepared at the point of origin by an accredited veterinarian, a representative of the animal health officials, or a designated official at a quarantined feedlot. A copy of this "S" brand permit must be immediately sent to the State animal health official, with the original accompanying the animals. The original must be delivered at the destination and kept at that location for a minimum of six months.

3. Permit for entry (cattle and bison) --A premovement authorization for animals to move into a State, which must be obtained from the State animal health official in the state of destination before the animals are moved. The authorization for entry will state the conditions under which the movement may be made. These conditions may be in addition to the requirements of those in the UM&R and Code of Federal Regulations. The authorization may be written or oral.

B. Movement of Restricted Animals

1. Cattle and bison

- a. Reactors--Reactor cattle and bison must remain on the premises where they are found until a State or Federal permit for slaughter is obtained (Paragraph A, 1 above). The reactor animals can be tagged and branded either on the farm or at a State or Federally approved livestock market or stockyard. They must be moved to a recognized slaughter establishment or to a State or Federally approved livestock market for sale to a recognized slaughter establishment within 15 days of being tagged and branded. The time may be extended 15 days for reasons mutually acceptable to the cooperating State and Federal officials in charge. The animals must not be diverted from the permitted destination. When moved, the reactors must be segregated from all other classes of livestock in specially designated pens reserved for this purpose at specifically approved stockyards or State approved livestock markets or trucking facilities. These pens must be thoroughly cleaned and disinfected before being used for other than brucellosis-affected animals.

Animals that are tested at livestock markets and are classified as reactors must only move as described in the above paragraph. All official vaccinates that are positive on the standard card test must be considered reactors. All exposed animals must be returned to the herd of origin under quarantine or they must be "S" branded and sold for slaughter, to a quarantined feedlot or a quarantined pasture.

- b. Suspects--Suspects that are being moved or sold must be identified and moved in the same manner as for exposed cattle (see Paragraphs C and D below). However, a vaccinated suspect(s) at a livestock

market in a consignment of otherwise negative cattle (i.e., positive on the standard card test but negative on the CF and/or rivanol tests) may move as follows:

In a single consignment of cattle that are from a producer's herd of origin, the owner must either:

- 1) return the vaccinated suspect(s) under quarantine to the herd of origin until the suspect(s) is negative on the standard card test, or is declared a stabilized suspect by a designated epidemiologist after subsequent test(s) conducted in 30 days or more, or is classified a reactor on a subsequent test; or
- 2) sell the suspect(s) to a quarantined feedlot, quarantined pasture, or to slaughter, identified with an "S" brand.

If the owner and the market operator agree in writing that they will be fully responsible for preventing contact or other exposure to non "S" branded cattle, these "S" branded cattle may be moved to one additional market and then either to a quarantined feedlot, or to a quarantined pasture, or to immediate slaughter. All such movements must be under "S" brand permit, and must be permissible under State laws, rules, and regulations.

The owner may either return the cattle that were negative on the standard card test in this consignment to the herd of origin or sell them for movement to another herd within the State or for movement interstate with a permit.

- c. Exposed cattle and bison--All exposed cattle and bison moving from a herd of origin or from a livestock market to a quarantined feedlot, or to a quarantined pasture, or to immediate slaughter, must remain on the premises where they are found until the owner has been issued an "S" brand permit for movement. If they are moved to market for sale to a quarantined feedlot, quarantined pasture, or immediate slaughter they must be moved through a specifically approved stockyard or through a State approved livestock market. Exceptions to the "S" branding and "S" brand permits are allowed for finished fed heifers moving directly to immediate slaughter at recognized slaughter establishments and for exposed cattle where movement to slaughter does not require transportation by rail or motor carrier. The cattle or bison must not be diverted from the permitted destination.

In addition, exposed cattle may move from the herd of origin or from specifically approved stockyards or State approved livestock markets directly to recognized slaughter establishments in a sealed truck without being permanently identified by "S" brand. The entire

truckload of cattle or other susceptible species must be consigned directly to slaughter at a single slaughter establishment. Mixed loads of slaughter, feeder, or breeding cattle must not be included in shipments of this type. None of the animals may be diverted to holding feedlots, pastures, or dealer pens. Truck seals are to be placed by State or Federal animal health personnel during regular work hours, or by accredited veterinarians. Each shipment must be accompanied by a permit as defined in Section A, 1 above, with the appropriate seal number recorded on the permit. Cattle to be transported in sealed vehicles must remain on the premises until the appropriate animal health personnel or accredited veterinarian issues the permit and seals the vehicle. No postauthorized permits may be approved. Truck seals are to be broken by State or Federal animal health personnel during regular working hours, or by accredited veterinarians, or by a slaughter establishment officer who has been designated by Meat Inspection or by State authorities.

- d. Heifer calves from affected herds--All heifer calves in an affected herd are included under the herd quarantine restrictions. If they are retained in the herd they should be calfhood vaccinated. These heifer calves may only be moved if they comply with the movement requirements outlined in Chapter 2, parts II D5, III D5, IV D5, and V D5 for each Class State.
- e. Other exposed cattle in affected herds--All other cattle and bison in affected herds (except those in 1, 2, 4, and 5 and steers and spayed heifers) are exposed and must be handled as described in Paragraph c, above.
- f. Untested test-eligible cattle--When untested test-eligible cattle and bison that originate from herds of unknown or negative status in Class C States or areas or from quarantined areas are sold or moved in marketing channels, they must be identified, tested at the first point of concentration and moved in the same manner as prescribed for exposed cattle and bison. Cattle and bison that originate from herds of unknown or negative status in Class B States or areas are sold or moved in marketing channels, they must be identified, tested at the first point of concentration and moved as negative tested cattle or bison if they qualify for movement as outlined in Chapter 2, Part IV D, otherwise, they must be moved in the same manner as prescribed for exposed cattle and bison. Cattle or bison that originate in a certified brucellosis Free herd are exempt from these restrictions.
- g. Herd depopulation--Reactors and "B" branded exposed cattle in herd depopulations must remain on the premises where they were found until the owner has been issued a State or Federal permit for movement for immediate slaughter. These cattle must be moved to a

recognized slaughter establishment or to a specifically approved stockyard or State approved livestock market for sale to a recognized slaughter establishment within 15 days of the branding and tagging date. The time may be extended 15 days for reasons mutually acceptable to the cooperating State and Federal officials in charge. The cattle must not be diverted from the permitted destination.

Instead of "B" branding, the exposed cattle or bison in a herd depopulation may be moved for immediate slaughter using USDA backtags for identification and escorted to slaughter by a State or Veterinary Services representative or moved directly to slaughter in vehicles that have been closed with official seals.

2. Swine

- a. Reactors--Reactor swine must be sold for slaughter and removed from the premises under State or Federal permit within 15 days of the date they are identified as reactors. (Reactor herds under Plan 2, Chapter 3, Part III, may handle reactors according to recommended procedures of the plan.) Reactors must remain on the premises where they were found until the owner obtains a State or Federal permit for movement to slaughter. Swine moved for immediate slaughter must go to a recognized slaughter establishment or to a State or Federally approved market for sale to a recognized slaughter establishment. Reactor swine must be slaughtered as soon as practical. The time may be extended for reasons mutually acceptable to the cooperating State and Federal officials in charge.
- b. Quarantined and exposed swine--Quarantined and exposed swine must be moved under permit. They can be moved for immediate slaughter or returned to the herd of origin. When moved, the swine must be segregated from all other classes of livestock. When moved to premises other than the herd of origin, exposed animals must be individually identified by eartag and the number must be recorded on the permit.

6. Procedures for Handling Infected or Restricted Herds

A. Quarantines

1. Cattle and bison --All cattle, except steers and spayed heifers, must be confined to the premises until the herd is freed of brucellosis or sold for slaughter under permit or "S" brand permit. This rule applies to officially vaccinated heifers over 12 months of age in affected herds, as well as to nonvaccinated calves over six months of age. (See Chapter 1, Part II, Section 5 for exceptions.) Two negative herd blood tests are required for release of quarantine, with the first negative herd blood test occurring 30 days or more after all reactors have been removed from the herd and slaughtered. The second of these tests (the releasing test) must occur 180 days or more after all reactors have been removed. The releasing test must include all nonneutered cattle over six months of age. (The purpose of testing official vaccinates of dairy breeds under 20 months of age and of beef breeds under 24 months of age is to establish "baseline" titers for evaluating the probability that these animals will be infected with field strains of Brucella when they are retested.) In all areas, an additional blood test of all nonneutered cattle over six months of age in the herd is required either between six months and 12 months after an affected herd has been released from quarantine or between 10 and 16 months after the last reactor has been removed.

Exceptions to the interval between the tests required for releasing herds from quarantine are allowable only when Brucella abortus Strain 19 organisms have been isolated from the reactor animal or when all epidemiologic evidence is consistent with a Brucella abortus Strain 19 infection and not with field strain infection.

Certified Brucellosis-Free herds that have been quarantined for a "whole herd vaccination" program may be released in accordance with the provisions of Chapter 1, Part II, Section 2, A, 3.

All of the above conditions also apply to herds that have participated in a whole herd vaccination plan.

2. Swine --All swine in infected herds must be confined to the premises until the herd has been freed of brucellosis or sold for slaughter under permit. Two negative herd blood tests are required for release of quarantine, with the first test occurring 30 days or more after all reactors have been removed and slaughtered. The second test must occur 90 days or more after the first negative test. Herds of origin of MST reactors that fail to reveal additional reactors on a test of the entire herd would not be required to be held under quarantine for additional testing unless there is evidence of Brucella infection or exposure to brucellosis.

B. Quarantined Feedlot

A quarantined feedlot is maintained for finish feeding cattle or bison in drylot with no provisions for pasturing or grazing. It must be jointly approved by the State and Federal animal health officials. Breeding or "two-way" cattle and bison are not allowed in a quarantined feedlot. All parturient and post-parturient cattle and bison must be officially tested for brucellosis within 30 days of entry into a quarantined feedlot. All cattle and bison in a quarantined feedlot are classified as exposed to brucellosis. Upon entering these feedlots, negative exposed and untested test-eligible animals--but not steers or spayed heifers--must be permanently identified with a hot iron "S" brand either on the left jaw or high on the tailhead (over the fourth to the seventh coccygeal vertebrae). All cattle or bison leaving these feedlots--except steers and spayed heifers--must either

- o go directly to slaughter; or
- o be moved directly to another quarantined feedlot with a permit from the State animal health official; or
- o be "S" branded at the quarantined feedlot and moved to a livestock market to be sold for direct movement to another quarantined feedlot or directly to slaughter. In this case, the cattle or bison must be accompanied by a 1-27 permit issued at the market.

The animal health officials will establish procedures for accounting for all animals entering or leaving quarantined feedlots. The community must be notified of the presence of a quarantined feedlot. (See Chapter 1, Part 2, E.)

Quarantined feedlots are not considered to be herds when evaluating the successful traceback of MCI reactors or for meeting herd blood test requirements.

C. Quarantined Pastures

Applications for establishing quarantined pastures must be reviewed and recommended jointly by the State and Federal animal health officials.* The applications must be submitted to the Deputy Administrator for final approval. Approval of a quarantined pasture must not exceed 10 months. Quarantined pastures may receive cattle only from intrastate points of origin; they may only involve movements of cattle interstate for slaughter or to quarantined feedlots. All animals in the quarantined pasture are classified as exposed to brucellosis. Breeding or "two-way" cattle are not allowed in the quarantined pasture. All parturient and post-parturient cattle and bison must be officially tested for brucellosis within 30 days of entry into a quarantined pasture. All animals in the quarantined pasture must be the same sex, unless they are neutered. Upon entering the quarantined pasture, all animals except steers and spayed heifers must be permanently identified with a hot iron "S" brand either on the left jaw or high on the tailhead (over the fourth to the seventh coccygeal vertebrae).

All animals except steers and spayed heifers leaving the quarantined pasture must move only for immediate slaughter or to a quarantined feedlot. The movement must be in accordance with established procedures for handling quarantined (exposed) animals (see Part II, Section 5) including obtaining "S" brand permits before movement.

The animal health officials will establish procedures for accounting for all animals entering or leaving the quarantined pasture. All exposed cattle must vacate the premises on or before the date the approval expires. The community must be notified of the presence of a quarantined pasture. Quarantined pastures are not considered to be herds when evaluating the successful traceback of MCI reactors or for meeting herd blood test requirements.

D. Individual Herd Plan

The herd owner (and his veterinarian if the owner requests) and a veterinarian of the Cooperating Brucellosis Eradication Program are to develop a plan for eliminating brucellosis from each affected herd. The plan is to be formalized as a Memorandum of Agreement between the owner and the animal health official. The plan may be reevaluated and changed, if all the parties concerned agree. It is the responsibility of all parties to the agreement to adhere to the plan throughout the period of eradication of the disease from this herd.

The plan must be designed to reduce and then eliminate brucellosis within the herd, to prevent spread to other herds, and to prevent the reintroduction of brucellosis after the herd is free of the disease. Developers of the plan should consider the following factors:

- o the classification of the State in which the herd is located
- o the risk of spread to other herds of cattle (potential "off-site costs" to other herd owners and society)
- o the amount of infection and possible exposure within the affected herd
- o the type of cattle operation
- o how herd management practices and economic factors relate to procedures for controlling and eradicating the disease.

Vaccination of calves should be discussed with the owner and recommended for calves that are in high-risk areas or that may be sold into high-risk areas. In special situations, "whole herd vaccination" may be recommended with concurrence of appropriate State and Federal officials. The developers are to prepare a written plan that will be epidemiologically sound for the particular herd. It is to include:

- o testing schedules
- o herd health management practices

- o procedures to govern preparturient and parturient cows
- o the exit or entry of cattle into the herd
- o identification of cattle
- o sanitation practices
- o the use of Brucella abortus Strain 19 vaccine.

The plan should also include other appropriate practices to confine and eliminate the disease.

When suspects are found in any herds, a similar individual herd plan is to be initiated. This plan is to include testing schedules and management plans that will minimize spread of brucellosis within the herd or to other herds.

For heifers and heifer calves in herds known to be affected, the plan would be required to contain the following restrictions:

1. All heifer herds must be included under the quarantine.
2. All heifer calves, between 4 and 8 months of age at the time the herd is quarantined, must be officially vaccinated for brucellosis, or identified with an official eartag.
3. All non-vaccinated heifer calves over 8 months of age must be considered test-eligible and must be included in all herd tests if kept in the herd.
4. All officially calfhood vaccinated heifers remaining in the herd must be included in all herd tests provided they have been vaccinated for at least 6 months.
5. All vaccinated heifer calves that have been vaccinated for 6 months and all non-vaccinated heifer calves at least 8 months of age that are maintained separately from the adult herd immediately after weaning must be included on the 6-month post-quarantine release test. It is recommended that all heifers be tested immediately prior to breeding and at appropriate intervals thereafter until they have calved.

E. Herd Depopulation

Among the strategies for eradicating the disease, State and Federal animal health personnel should consider depopulating infected herds that have a high rate of infection, an infection of long duration, or infected herds found in areas that were previously free of brucellosis.

F. Retesting Reactors

Within three days after being notified of the results of an initial herd blood test, the owner may request an additional blood test on reactors at his own expense. The request must be based on sound epidemiological evidence and all animals must remain under herd quarantine.

G. Reclassifying Reactors

Under certain conditions, reactors may be eligible for reclassification, as provided for in Section 7, Paragraph F of this chapter.

H. Cleaning and Disinfection

Premises must be cleaned and disinfected under State or Federal supervision with 15 days after reactors have been removed for slaughter. The time may be extended 15 days for reasons mutually acceptable to the cooperating State and Federal officials in charge. The requirements of 9 CFR 51 must be met to qualify for Federal indemnity.

I. Identifying Reactor Cattle and Bison

All reactor cattle and bison must be permanently identified by hot iron branding with the letter "B" (at least 2 x 2 inches) on the left jaw. An approved reactor tag must be placed in the left ear. Reactors must be identified within 15 days of the test date. The time may be extended 15 days for reasons mutually acceptable to the cooperating State and Federal officials in charge. The requirements of 9 CFR 51 must be met to qualify for Federal indemnity.

J. Identifying Exposed Cattle and Bison

All exposed cattle and bison moving from a herd of origin, or from a livestock market to a quarantined feedlot or quarantined pasture, or to immediate slaughter, must be identified by branding the letter "S" (at least 2 x 2 inches) with a hot iron on the left jaw, or high on the tailhead (over the fourth to the seventh coccygeal vertebrae). The exposed cattle and bison must be identified with the "S" brand before being moved. However, there are six exceptions:

1. Exposed cattle while in the herd of origin may be identified by other means and a permit may be issued to the owner to move them to a livestock market where they must be identified by "S" brand upon arrival.
2. Cattle and bison exposed at the livestock market may be returned to the herd of origin under quarantine for further testing without an "S" brand.
3. Exposed cattle and bison may move with an "S" brand permit from the herd of origin or from specifically approved markets directly to Federal or State inspected slaughter establishments in a sealed truck

without being permanently identified by "S" branding.

4. Finished fed heifers may move directly from the quarantined feedlot to Federal or State inspected slaughter establishments without an "S" brand.
5. Exposed cattle and bison may move directly to slaughter at Federal or State inspected establishments without "S" branding when the movement does not require rail or motor carrier transportation.
6. Exposed cattle and bison in herd depopulations must be "B" branded, or moved for immediate slaughter using USDA backtags for identification and escorted to slaughter by a State or Veterinary Services representative, or moved directly to slaughter in vehicles that have been closed with official seals.

K. Identifying Suspects

Cattle and bison classified as suspects that are being moved or sold must be identified and moved in the same manner as prescribed for exposed cattle and bison.

If suspects are moved from a herd of origin directly to a livestock market without changing ownership, they are exempt from the "S" branding requirement. However, they must be tested or "S" branded upon arriving at the market.

L. Identifying Untested Test-eligible Cattle and Bison

Cattle and bison that are being moved or sold in marketing channels and that originate from Class B and Class C States or areas, shall move in the same manner as prescribed for exposed cattle and bison unless they are part of a certified brucellosis free herd. Testing of test-eligible cattle is required at the first point of concentration.

M. Identifying Reactor Swine

Reactor swine are to be permanently identified by placing an approved reactor eartag in the left ear.

N. Identifying Spayed Heifers

Spayed heifers may be officially identified by applying a hot iron brand to either or both jaws using an open spade design, as used in playing cards (), of not less than 3 inches high.

7. Epidemiologic Procedures

A. Epidemiologic Services

The Brucellosis Eradication Program will furnish epidemiologic services to aid veterinarians and herd owners in preventing and controlling brucellosis, with the goal of eradicating brucellosis. To accomplish this goal, the following epidemiologic-related services will be instituted:

1. State and Federally employed veterinarians who have responsibilities in the brucellosis program will attend an APHIS short course or its equivalent on brucellosis epidemiology within the first year they are assigned to the program. Those who have been working on this program but who have not attended a brucellosis epidemiology course will receive this training at the earliest possible date. They will attend refresher courses annually or whenever made available.
2. Accredited veterinarians performing official brucellosis work will be required to participate in a structured program of continuing education on program elements. At least once during each 3-year period after the initial program, they will attend a refresher course on the program.
3. State livestock inspectors and APHIS animal health technicians will be required to participate in a structured course of continuing education on the program. They will attend refresher courses annually.
4. Each State brucellosis program supervisor will notify the State public health agency within 15 days of the time a herd has been quarantined for brucellosis. The public health agency will be requested to mail an educational letter to the owners of quarantined herds.
5. Each State should require that an educational statement on brucellosis be given to buyers/sellers at the time cattle or bison change ownership:
 - (1) to create an awareness that brucellosis is a contagious disease;
 - (2) to reduce the risk of buying/selling brucellosis infected cattle;
 - (3) to encourage new owners to test cattle and bison 45-120 days after purchase;
 - (4) to encourage owners to vaccinate calves; and
 - (5) to motivate buyers/sellers to take positive actions to prevent the spread of brucellosis.

The statement should:

- (1) be designed to meet varying conditions on a State-by-State or regional basis according to the need for education;

- (2) be written in plain English and have the approval of the responsible State-Federal officials;
- (3) be printed in large, easily readable type on paper which is a contrasting color that will attract the attention of buyers/sellers.

The statement should become a part of the necessary papers involved in any livestock transaction such as brand release, bill of sale, health certificate, etc., with copies for both buyer and seller.

Here is an example:

BRUCELLOSIS IS A CONTAGIOUS DISEASE

Learn How to Reduce Your Risk of Buying Brucellosis-Infected Cattle

\$SAVE DOLLARS\$--READ THIS

BRUCELLOSIS-exposed cattle may be blood test negative at the time of sale because they are incubating the disease and are not yet positive on the blood test.

TO REDUCE RISKS of spreading disease from cattle that are incubating brucellosis at the time of sale AND TO SAVE DOLLARS, follow these recommendations:

1. Ask the seller to give you information on the BRUCELLOSIS status of the herd or herds of origin of any cattle you purchase.
2. Take appropriate precautions to protect these cattle from exposure to BRUCELLOSIS while you own them.
3. Have the cattle blood tested for BRUCELLOSIS between 45 and 120 days after you purchase them, to check for previously incubating infection.
4. If the blood tests indicate BRUCELLOSIS, ask your veterinarian and a veterinarian from the State animal health agency to evaluate the situation and provide assistance to save you dollars that otherwise could be lost.

FOR FURTHER INFORMATION

CALL Telephone Number 000-000-0000

Name and Address of State Animal Health Agency

INCREASE PROTECTION WITH VACCINATION

Vaccination with Strain 19 Brucella abortus vaccine is recommended to increase protection for calves that may be sold or exposed to BRUCELLOSIS in the future.

B. Adjacent Herds and Epidemiologically Traced Herd Testing

Adjacent herds, or herds sharing common pasture or having other contact with a herd affected with brucellosis, and herds containing previous purchases from or exchanges with an affected herd must have an approved action plan within 15 days in Class Free and Class A States and areas and 45 days in Class B and Class C States and areas from the time the affected herd is disclosed. (See Chapter 1, Part III, C.) The plan should be adapted to the circumstances and may require handling the herd as an affected herd. If a disagreement occurs on the method of handling the herd, the herd owner, the State animal health official, the designated epidemiologist, and, if requested, the owner's veterinarian, will meet to resolve the differences.

When a brucellosis affected herd is released from quarantine, the owners of the potentially exposed herds must be informed that a second negative herd blood test is desirable. If the herd owner decides not to have a second test, the State or Federal animal health representative will prepare a statement indicating that the value of a second test was discussed with the owner and will list the reasons the herd was not given the second test. A copy of this statement will be given to the herd owner.

C. Individual Herd Plan

(See Chapter 2, Section 6, D.)

D. Traceback and Investigation of Reactors

1. Successful traceback of MCI reactors (cattle and bison) --A successful traceback of MCI reactors occurs when the herd of origin is located and the herd is tested when necessary. Tracebacks to dealers, commission firms, or other intermediate points are only considered successful if all possible herds of origin are located and the herds are tested when necessary. In order to close an investigation of a "soldout" market cattle reactor herd as a successful traceback, the slaughter of the animals and the absence of any test-eligible cattle remaining on premises must be confirmed and documented. (See Chapter 1, Part I, Herd.) Tracebacks to feedlots (Chapter 1, Part I, Feedlot) are considered successful and the feedlots are to be quarantined and tested or slaughtered. Tracebacks to quarantined feedlots (Chapter 1, Part I, Quarantined feedlot) and to quarantined pastures (Chapter 1, Part I, Quarantined pasture) are successful and are reported as traced to known reactor herds. A preentry test of test-eligible cattle is strongly recommended for cattle entering these quarantined feedlots and quarantined pastures.

2. Successful traceback of MST reactors (swine) --A successful traceback occurs when the premises or herd of origin of a market test reactor is located and the herd is tested. If the herd has been dispersed or a significant proportion of the herd has been dispersed, the herds of destination of these dispersed animals must be located and the brucellosis status of these dispersed animals established by blood test to claim a successful traceback. Further testing in the herd of destination should be conducted as is considered necessary. If all animals at the premises of origin were sold for slaughter, a successful traceback can also be claimed. However, if some animals were not sold for slaughter, then the animals that were sold to be returned to farms must be traced and tested at destination to claim a successful traceback. Tracing to dealers, feedlots, commission firms, and similar points of origin are not considered successful tracebacks of reactors.
3. Epidemiologic investigation of MCI reactors (cattle and bison) --Every traceback of market cattle reactors requires an epidemiologic investigation and follow-up (including traces to "soldout" herds), to effectively locate and control the disease. This investigation must include the following:
 - a. If a reactor in marketing channels had positive test results on any of following tests--CF test, rivanol test, or standard card test (when the standard card was the only test conducted)--or had appropriate supplemental test titers, then:
 - (1) A herd blood test of the herd of origin must be performed, unless the epidemiological investigation indicates that the results of the blood tests of the market cattle reactors were not caused by field strains of Brucella. When a herd blood test is not performed, a State or Federal animal health representative will prepare a statement indicating that the findings of the epidemiologic investigation were discussed with the owner or the owner's representative and will include a list of the reasons the herd was not tested. The statement must be signed by both parties and both parties must receive a copy for future reference.
 - (2) Contact and/or adjacent herds must be identified, recorded, and investigated.
 - (3) In Class Free and Class A areas, all sales following the estimated date of onset of infection must be traced and the herds of destination identified, recorded, and tested for evidence of infection. If the herd is not tested, a statement must be prepared as in (1). In Class B and Class C areas, these procedures will be carried out to the extent resources are available.
 - (4) If the herd of origin is negative, the herd will be retested 30 to 90 days later if the designated epidemiologist considers it necessary.

- (5) If the reactor in marketing channels has not been slaughtered and the herd of origin no longer exists or the owner decides to slaughter all of the exposed animal(s) in the herd of origin, the tissues from the reactor animal(s) should be cultured for Brucella . State and Federal animal health personnel must conduct epidemiological investigations of the adjacent and other contact herds to determine if infection is present. The designated epidemiologist will determine the extent of the investigation.
- b. If a reactor in marketing channels was positive on presumptive tests but was not positive on the CF test, rivanol test, standard card test (when the standard card test was the only test conducted), or supplemental test, the owner must be informed of the results in writing, by telephone, or by personal visit. A joint decision will be reached to test or not to test the herd. Any decision not to test must be documented. The herd must be tested if reasonable doubt exist about the reason for the serologic response, if evidence of Brucella infection is present, or if the status of contact or other herds in the community is questionable.

If the herd of origin for these suspects no longer exists or the owner decides to slaughter the suspects rather than return them to the herd of origin, the tissues from the suspect animal(s) should be cultured for Brucella . State and Federal animal health personnel must conduct epidemiological investigations of the adjacent and other contact herds to determine if infection is present. The designated epidemiologist will determine the extent of the investigation.

4. Epidemiologic investigation of MST reactors (swine) --
Every market swine test reactor will be handled as outlined in (a) or (b) below:
- a. For reactors in marketing channels with positive rivanol or CF titers and those on which rivanol or CF tests were not conducted:
- 1) Every effort is to be made to trace these animals to their herds of origin. This will include tracing all swine in lots with unidentified reactors and conducting an epidemiological examination of their herd of origin.

- 2) The herd of origin is to be blood tested. Multiple herds of origin of swine in lots with unidentified reactors will be tested in order of their probability of being infected, as determined by an epidemiological examination of the source herds.
- 3) A report outlining the conduct of the traceback investigation is to be prepared and submitted on all reactors investigated under this section. All steps taken in unsuccessful traceback investigations must be documented and reviewed by the designated epidemiologist for adequacy.

- b. For reactors in marketing channels which were negative on the rivanol or CF test:

A written record must be maintained for all such swine. This record will include, as a minimum, the date and place the animal was bled, test results, identification data, number in the consignment, and the consignor's name and address. (The ANH Form 4-100) is recommended for recording this information.) Traceback investigations and testing the herd of origin are recommended but not required.

E. Classification of Cattle and Bison

1. Serologic tests--Animals are classified as Negative, Suspect, or Reactor based in part on their serologic test results, using the criteria below for classification. Titer responses for all cattle must be evaluated by a trained, experienced epidemiologist(s) who has been designated to perform and/or supervise this function in each of the States. The designated epidemiologist must take into consideration the animal and herd history and other epidemiologic factors. The designated epidemiologist has the authority to deviate from the reactor criteria but must document the reasons for doing so.

2. Other Diagnostic Tests and Methods

Infection of animals by *Brucella* may also be indicated or confirmed by other diagnostic procedures such as the bacteriologic cultivation and isolation of *Brucella* from tissues, secretions, or excretions and positive agglutination in tests such as the semen plasma test.

F. Reclassifying Reactors

Animals initially classified as reactors, including MCI reactors, except as specified in Chapter 2, Part IV, Section 4, C, c (v), d, and f), may be eligible for reclassification, provided:

1. a complete epidemiological investigation of the herd is conducted and there is no evidence of exposure to or infection with *Brucella* ; and
2. the herd in which the animals have been maintained remains under quarantine pending final classification; and
3. final classification is determined by the designated epidemiologist.

Serologic Classification of Cattle and Bison by Vaccination Status

Serologic Tests	Nonvaccinates (6-months of age and over ^{1,2})		Official Vaccinates (test-eligible)	
	Negative	Suspect	Negative	Suspect
BAPA or RST	No Agglutination	Not used to classify as suspect or reactors but only to identify those samples that must be tested by other test procedures.	No agglutination	Not used to classify animals as suspects or reactors but only to identify those samples that must be tested by other test procedures.
Standard Plate & Standard Tube Tests	Complete agglutination at 1:25 titer or lower	Any agglutination at the 1:50 titer or incomplete agglutination at the 1:100 dilution	Complete agglutination at the 1:50 titer or lower	Any agglutination at the 1:100 titer or incomplete agglutination at the 1:200 dilution
Standard Card Test	No agglutination	Agglutination present and SPT or STT tests are negative. An animal positive on the standard card test can be classified no less than a suspect.	No agglutination	Agglutination present and other test are performed and are used for evaluating animals status. Animal must be classified either as a suspect or as reactor.
Manual CF Test	1+ (25% fixation at the 1:10 dilution or lower	2+ (50% fixation at the 1:10 dilution or higher but less than 2+ (50% fixation) at the 1:20 dilution	1+ (25% fixation at the 1:10 dilution or lower	At least a 2+ (50% fixation) at the 1:10 dilution but lower than a 1+ (25%) fixation at the 1:40 dilution
Technicon Automated	No fixation at the 1:5 dilution	Fixation at the 1:5 dilution but no fixation at the 1:10 dilution	May have fixation at the 1:5 dilution or lower but no fixation at the 1:10 dilution	Fixation at the 1:10 dilution but no fixation at 1:20 or higher
Rivanol	Incomplete agglutination at the 1:25 dilution or lower	Not applicable	Incomplete agglutination at the 1:25 titer or lower Note: If an animal was adult vaccinated within the previous 5 months, an incomplete agglutination at the 1:50 titer or is considered negative	Complete agglutination at the 1:25 titer or higher but no agglutination at the 1:100 dilution if the CF Test is done and is in the negative or suspect category
				Complete agglutination at the 1:25 titer or higher when: 1) CF Test is not done, or 2) CF Test is done and is in the reactor category or When the Rivanol test shows incomplete agglutination at the 1:100 titer or higher regardless of CF result

¹ Except steers and spayed heifers

² Animals which were unofficially vaccinated against brucellosis are handled in the same manner as nonvaccinates

G. Specific Assignments and Responsibilities of a Designated Epidemiologist

Designated epidemiologists have been assigned certain specific responsibilities as part of their assigned duties. These specific responsibilities are:

1. Test interpretation and classification

- a. To evaluate the titer responses for all cattle and bison, taking into consideration the animal and herd history and other epidemiologic factors affecting the classification. The designated epidemiologist has authority to deviate from suspect and reactor classifications.
- b. To determine the final classification of animals that were initially classified as reactors, following a complete epidemiological investigation of the herd.
- c. To determine the interpretation and use of supplemental tests.
- d. To evaluate retest results on MCI suspects that were returned to the herd of origin under quarantine and declare the animal a stabilized suspect if a classification other than negative or reactor is warranted.

2. Epidemiologic investigation and evaluation

- a. To determine the scope of the epidemiologic investigation that is initiated for *Brucella* infections located among herds that were adjacent to or that had epidemiologic contact with the herd or origin of a market cattle suspect, when the herd of origin no longer exists or the suspect is not available for retesting.
- b. To assist the State animal health official, the herd owner, and, if requested, the herd owner's veterinarian, to resolve differences in the proposed action plan for handling herds that are adjacent to or epidemiologically involved with an affected herd.
- c. To determine the extent of the investigation that will be conducted on adjacent herds and other contact herds when an MCI reactor herd of origin has been sold before a herd blood test has been performed.

3. Continued surveillance of suspicious herds

- a. To determine the necessity for retesting the herd of origin of market cattle reactors when the initial herd blood test was negative.
- b. To determine the necessity for retesting those herds that received cattle from affected herds when the initial herd blood test was negative.
- c. To evaluate each dairy herd that participated in a whole herd vaccination plan and that continues to be suspicious on brucellosis ring test surveillance after being released from quarantine.

8. Procedures for Calculating Rates and Statistics

The following procedures are used to calculate disease rates and other measures for evaluating the progress and status of the programs.

A. Market Cattle Identification Program (MCI)

1. Crude MCI reactor prevalence rate

The crude MCI reactor prevalence rate = $\frac{X}{Y} \times 100$;

where

X = the total number of MCI reactors credited to the State or area during the period, and

Y = the total number of MCI cattle from the State or area that were tested during the period.

The quotient is multiplied by 100 to express the prevalence of MCI reactors for each 100 tested cattle under the MCI program for that specific State or area.

2. Adjusted MCI reactor prevalence rate

The adjusted MCI reactor prevalence rate =

$$\frac{X - (A+B+C)}{Y} \times 100;$$

where

X = the total number of MCI reactors credited to the State or area during the period,

A = the number of MCI reactors traced to out-of-State origins,

B = the number of MCI reactors traced to known infected herds,

C = the number of MCI reactors traced to herds of origin that were tested and found to be negative for brucellosis, and

Y = the total number of MCI cattle from the State or area that were tested during the period.

The quotient is multiplied by 100 to express the prevalence of MCI reactors for each 100 tested cattle under the MCI program for the specific State or area.

B. Infected Herds

1. Accumulated infected herds --This is the number of infected herds that had one or more reactors diagnosed on one or more occasions during a

fiscal year, during any consecutive 12-month period, or during any other specified period of time. Each herd is counted only once regardless of the number of tests performed during the period. This is usually expressed as the number of cases that occurred rather than as a rate.

2. Newly infected herds --The number of newly infected herds is determined by subtracting from the number of accumulated infected herds those herds that had reactors diagnosed in the immediately preceding fiscal year or in the preceding consecutive 12-month period. The infected herds are counted only once during the 12-month period. This is usually expressed as the number of cases that occurred rather than as a rate.

3. Herd Infection Rate --

$$\text{Herd infection rate} = \frac{X - Y}{Z} \times 100;$$

where

X = the accumulated number of infected herds for that 12-month period,

Y = the number of infected herds during this 12-month period which were not caused by infection with field strain Brucella , and

Z = the total number of herds in the State or area.

(Do not count quarantined feedlots, quarantined pastures, or multiple units of animals that are managed as a single herd under common ownership.)

The infected herd rate represents the percentage of the herds in the area at risk which were infected with field strain Brucella during the 12-month reporting period.

4. Quarantined herds --The number of quarantined herds existing in a State or area is reported monthly by each State. The figure represents the total number of herds that have had reactors and that are still under quarantine (even though they may have had one or more negative herd blood tests), as of a specific date. The tabulation is usually conducted on the last day of the month.

5. Length of quarantine

a. the number of herds in a State or area that have remained quarantined for 2 years or longer

b. accumulative infected herd ratio

1) Total ratio = $\frac{\# \text{ of accumulative infected herds in 12 months}}{\# \text{ of quarantined herds on the date prepared}}$

- 2) Adjusted ratio = use the formula for the total ratio and subtract the newly infected herds for the previous 12 months from the numerator and denominator.

6. Retest Frequency

a. vaccinated herds

- 1) the vaccinated herds retest frequency = $100 \times$

$$\frac{\# \text{ of adult vaccinated herds exceeding 180 day retest}}{\# \text{ of adult vaccinated herds under quarantine}}$$

- 2) # of vaccinated herds not retested within 180 days.

b. non-vaccinated herds.

- 1) the non-vaccinated herds retest frequency = $100 \times$

$$\frac{\# \text{ of non-vaccinated herds exceeding the 180 day retest}}{\# \text{ of non-vaccinated herds under quarantine}}$$

- 2) # of non-vaccinated herds not retested within 180 days.

7. Postquarantine release testing

a) $\frac{\# \text{ of herds with PQ test}}{\# \text{ of herds eligible for PQ test}} \times 100 = \% = \text{PQ test ratio}$

b) $\frac{\# \text{ of herds found affected on PQ test}}{\# \text{ of herds tested for PQ test}} \times 100 = \% = \text{affected PQ test ratio}$

8. Reactor identification rate

a) $\frac{\# \text{ of MCI reactors untraceable}}{\# \text{ of MCI reactors disclosed}} \times 100 = \% = \text{MCI trace ratio}$

b) $\frac{\# \text{ of MCI reactors disclosed}}{\# \text{ of MCI samples tested}} \times 100 = \% = \text{MCI reactor ratio}$

C. Adjacent Herds

1) adjacent herd ratio = $100 \times \frac{\# \text{ adjacent herds tested}}{\# \text{ adjacent herds eligible for test}}$

2) affected adjacent herd ratio = $100 \times \frac{\# \text{ adjacent herds affected}}{\# \text{ adjacent herds tested}}$

PART III
PARTICIPATION IN HERD OR AREA PLANS

A. Certification of Herds and Areas (Cattle)

1. Obtaining initial certification status --To obtain initial status as a Certified Brucellosis-Free Herd or as a Class Free, A, B, or C area, the herds or areas must use one or more of the accepted methods listed in Parts I, II, III, IV, or V of Chapter 2 for qualifying for that particular status. The herds or areas must meet all of the qualifying standards given under those parts.
2. Maintaining certification status --State and Federal officials in charge of program activities in each State are responsible for continuously evaluating the efficiency of local procedures for locating and eliminating infected cattle. The minimum standards as described for each plan in Parts I, II, III, IV, or V of Chapter 2 must be met or exceeded throughout the certification period to maintain continuous status. A review committee including representatives from States, universities, and industry will evaluate each State's brucellosis program as needed, but at least once every three years. To maintain certification, the State and Federal officials in that State must prepare an annual report showing the degree of uniformity and adequacy of the surveillance measures, the number of suspicious and affected herds disclosed, infection rates, and the adequacy of program standards within the area. The content and format of the annual report is available in Veterinary Services Memorandum No. 551.4, which is revised as needed.
3. Terminating certification status --Herd or area certification status may be terminated at any time during the period with 10 days' notice for any of the following reasons--if the herd or area:
 - a. does not have continuous and adequate surveillance measures including adjacent herd and epidemiological tracing measures; or
 - b. has excessive herd infection rates; or
 - c. fails to comply with quarantine requirements, with testing schedules, or with initial testing schedules for suspicious herds detected by the surveillance measures, including those herds designated as adjacent herds and those designated as epidemiologically traced herds (see Chapter 1, Part II, Section 7, B); or
 - d. improperly disposes of reactors or exposed animals.

It may not be necessary to terminate area status if the States' attorneys have initiated legal action against a livestock owner who fails to follow program standards in the ways described in c and d above and if they are actively pursuing the case.

4. Reinstating certification status --When herds or areas lose certification status because of deficiencies in levels of surveillance or in procedures necessary for locating affected herds, controlling infected and exposed animals, and eliminating infected animals, as prescribed under the various plans and procedures, the certification status may be reinstated when the State and Federal officials in that State present sufficient evidence that the procedural deficiencies have been corrected. Areas in which these deficiencies have not been corrected within six months of the termination of the status must requalify for initial certification.

When herds or areas lose certification status because of excessive herd infection rates or excessive market cattle reactor prevalence rates, the area must qualify as for initial certification.

5. Federal quarantines within Class A States --Within Class "A" States, it is possible to have State-Federal quarantines of circumscribed areas of cattle population without loss or denial of Class "A" status for the State.

- a. Conditions under which a Federal quarantine may be approved within Class "A" States:
- 1) The Chairman of the Brucellosis Committee of the United States Animal Health Association (USAHA) appoints a committee of five members to review an application from cooperating State and Federal animal health officials for a State to retain status as Class A, or to advance to that status, when data indicate that the State has an area that no longer qualifies as Class A or does not qualify for advancement to Class A status.
 - 2) No State may have more than two such areas.
 - 3) All members appointed to the committee must be knowledgeable about brucellosis.
 - 4) Members should represent one of each category: a representative of the cattle industry, a representative of a university, a State animal health official and a Federal animal health official from two nonadjacent States, and a representative of the USAHA Brucellosis Committee.
 - 5) No members may be residents of the State that is applying.
 - 6) The committee, after reviewing the application and interviewing witnesses as necessary, will recommend approval or disapproval of the application to USDA.
- b. Format for the application for quarantine--Class A States requesting a quarantine will prepare a cooperative State-Federal agreement. This agreement will define the responsibility of each agency for the following specific items and issues:

- 1) The procedures and responsibilities for placing and enforcing quarantines both on the area and herds within the area.
- 2) The procedures to permit movement for specific purposes both within the defined area and from the defined area.
- 3) The legal description of geographic boundaries of the areas to be quarantined.
- 4) The specific time period for eliminating all foci of infection.

c. Requirements for submitting the application:

- 1) The application must be accompanied by evidence that the majority of the livestock industry members from the area participated in developing the proposed plan are aware of the restrictions it will require, and will assist in monitoring and enforcing the plan.
- 2) Before the application is submitted, the State must be certain that the application includes provisions for moving cattle to slaughter identified with "B" or "S" brands under permit (VS Form 1-27 or equivalent), or moving them for other purposes with a certificate showing a negative test on each animal within 30 days before the animal is moved.
- 3) Appropriate legal authority and adequate funding must be available to carry out the provisions of the application.
- 4) The application may not be for areas larger than two counties and the areas must have clearly defined boundaries which provide geographic barriers that allow movement of cattle from and into the area to be monitored and restricted.
- 5) The time period to eliminate all foci of infection must be no longer than two years.

d. Monitoring and reporting:

- 1) Semiannual progress reports must be submitted to VS.
- 2) The reports will be reviewed and forwarded to committee members together with appropriate comments.
- 3) The committee may request additional reports at more frequent intervals and/or more detail on some components of the report.

e. Terminating the quarantine:

- 1) The area quarantine will be terminated and the area restored or advanced to Class A status when all requirements for Class A status have been met.

- 2) The area quarantine may be terminated and the entire State reclassified as Class B at any time the review committee recommends this action, or when the time period approved by the committee expires.
- f) Two areas in a State--If a State requests a two-area classification, a USAHA Advisory Committee will be appointed and must assure that all of the following specific criteria will be met before it recommends approval:
 - 1) Legislative authority--Legislative authority exists for maintaining separate areas within the State.
 - 2) Regulatory authority--Regulatory authority exists for maintaining separate areas within the State.
 - 3) Resources--Resources are available and are committed to maintaining separate areas within the State.
 - 4) Method--A creditable method exists for monitoring and controlling the movement of animals across the boundary.

B. Validation of Herds and Areas (Swine)

1. Obtaining initial validation status (swine) --To obtain initial Validated Brucellosis-Free Herd or Validated Brucellosis-Free area status, the herd or area must use one or more of the accepted methods presented in Chapter III for qualifying a herd or area. The herd or area must meet all of the qualifying standards given in Chapter III.
2. Maintaining validation status (swine) --State and Federal officials in charge of the program activities in each State are responsible for conducting a continuous evaluation of the efficiency of local procedures for locating and eliminating infected swine. To maintain continuous status, a State must meet or exceed the minimum standards as described for each plan in Chapter III of this book throughout the validation period.
3. Terminating validation status (swine)--Herd or area validation status may be terminated at any time during the period with 10 days' notice for any of the following reasons:

If the herd or area:

- a. does not have continuous and adequate surveillance measures, or
- b. fails to comply with quarantine requirements, with testing schedules, or with initial testing schedules for suspicious herds detected by the surveillance measures, or
- c. improperly disposes of reactors.

It may not be necessary to terminate area status if the State's

attorneys have initiated legal action against a livestock owner who fails to follow program standards and if they are actively pursuing the case.

4. Reinstating validation status (swine) --When herds or areas lose validation status because of deficiencies in surveillance or in procedures necessary for locating infected herds, in controlling infected and exposed swine, and in eliminating infected swine, as prescribed under the various plans and procedures, the validation status may be reinstated when the State and Federal officials in that State present sufficient evidence that the procedural deficiencies have been corrected. Areas in which the deficiencies have not been corrected within six months of the time the status was terminated must qualify for initial validation.

CHAPTER 2
BOVINE BRUCELLOSIS

PART I
CERTIFIED BRUCELLOSIS-FREE HERDS OF CATTLE OR BISON

A. Qualifying Methods

A herd may qualify for status as a Certified Brucellosis-Free Herd by one of the following methods:

1. Brucellosis ring test (BRT) --For initial certification, a herd must have a minimum of four consecutive negative BRT's conducted at intervals of 90 days or more. This must be followed by a negative herd blood test conducted within 90 days after the last negative BRT.

For recertification, a herd must have a herd blood test. Brucellosis ring test procedures are not used for recertifying herds.

2. Complete herd blood test --For initial certification, a herd must have at least two consecutive negative herd blood tests, between 10 and 14 months apart. Additional herd blood tests may be conducted if the owner wishes or if the certifying agencies consider it necessary.

For continuous certification a herd must have a negative herd blood test conducted within 60 days before the certification anniversary date. If the certification test is conducted within 60 days after the anniversary date, the certification period will be 12 months from the anniversary and not 12 months from the date of the recertifying test. During the interval between the anniversary date and the recertifying test, certification will be suspended. If a herd blood test for recertification is not conducted within 60 days after the anniversary date, then certification requirements are the same as for initial certification.

3. Purchasing a Certified Brucellosis Free Herd

- a. If a Certified Brucellosis-Free Herd is purchased, a negative herd blood test is not required if the purchased cattle remain on the premises. A new certificate will be issued in the new owner's name. The anniversary date and the herd number will remain the same.
- b. If part or all of a Certified Brucellosis-Free Herd is purchased and the cattle move directly to premises without other cattle, they may qualify without a test. A new certification number will be issued. The anniversary date of the new herd is established by the test date of the herd of origin or by a new herd test of the purchased cattle.

B. Conditions for Certifying the Herd

1. Size of area --Certified Brucellosis-Free Herd status applies only to individual herds and includes all offspring.
2. Duration of status --A herd is certified for 12 months.
3. Testing period --For initial certification: The herd must be tested twice, 10 to 14 months apart. If the BRT is used, herds can qualify for certification in nine months.

For recertification: The herd must have a negative herd blood test between 10 and 12 months after the last certification date for continuous status. A 60-day grace period is allowed, during which a herd may be reinstated with a single negative herd blood test.

4. Herd infection rates --There must be no evidence of infection at the time the herd is initially certified or recertified.
5. Animal infection rates --There must be no evidence of infection in individual animals at the time the herd is initially certified or recertified.
6. Suspects --When suspects are found, an individual herd plan must be developed for testing the suspect(s) in the future and for handling the herd as described in Chapter 1, Part 2, Section 7, c. This plan may range from a quarantine of the entire herd to a single retest of the suspect(s) using the appropriate tests described in Chapter 1, Part 2, Sections 4 and 7.
7. Herd Status, if infection occurs --When one or more reactors are found in a Certified Brucellosis-Free Herd or in a herd being tested for initial certification, the herd is considered affected and the quarantine and retest provisions in Chapter 1, Part II, Sections 3 and 6 will apply.

Initial certification: A herd qualifies for initial Certified Brucellosis-Free Herd status when it is free of infection, when all provisions for release of quarantine have been met, and when the additional provisions required under paragraphs A, 1 or 2 have been met. In qualifying a herd, a negative herd blood test and a complete epidemiological investigation may be used to resolve a suspicious BRT.

Recertification: If a retest of a Certified Brucellosis-Free Herd or of animals from the herd reveals only one reactor, the certification status will be suspended until all provisions for release of quarantine have been met. If more than one reactor is found, the herd certification will be terminated until all provisions for release of quarantine have been met and the additional provisions for initial Certified Brucellosis-Free Herd status required under paragraphs A, 1 or 2 above have been met. Herd retests for release of quarantine may also be used to fulfill the provisions required under paragraphs A, 1 or 2 above.

8. Movement of cattle into a Certified Brucellosis-Free Herd --The following rules apply when moving cattle into Certified Brucellosis-Free herds from:
- a. Quarantined feedlots--animals from quarantined feedlots may not be moved into Certified Brucellosis-Free Herds.
 - b. Certified Brucellosis-Free Herds or Class Free States or Areas--Breeding or dairy cattle originating from Certified Brucellosis-Free Herds or Class Free States or Areas do not need to be tested before being moved. However, when these cattle are added to a Certified Brucellosis-Free Herd, they must be tested within 60 and 120 days after being added, in order to qualify for Certified Brucellosis-Free status for sale purposes.
 - c. Class A, B, or C Areas or States--Test-eligible cattle from herds not under quarantine must have a negative blood test for brucellosis within 30 days before being moved. In addition, all other requirements for interstate or intrastate movement must be met. All cattle purchased from herds that are not Certified Brucellosis-Free must have a blood test between 60 and 120 days after being added. Animals added to a Certified Brucellosis-Free Herd under this provision will not receive new herd status for sale purposes until they have passed a test 60 to 120 days after being added and have been included in the herd blood test on the next anniversary of the recertification test.
9. Movement of cattle onto premises with a Certified Brucellosis-Free Herd --The following rules apply when moving cattle onto premises occupied by a Certified Brucellosis-Free Herd:
- a. Animals originating from a quarantined feedlot must not be maintained in association with a Certified Brucellosis-Free Herd.
 - b. Animals originating from feedlots other than quarantined feedlots may be held on premises with a Certified Brucellosis-Free Herd, provided these cattle meet the blood testing requirements before being moved into the feedlot and provided there is no contact with the Certified Brucellosis-Free Herd.
10. Recognition of Certified Brucellosis-Free Herds --The State Animal Health official and the Veterinarian in Charge will issue a Brucellosis-Free Herd certificate when the herd first qualifies for this status.

When the herd qualifies for recertification, the State Animal Health Official will issue a certification renewal form showing the herd certification number, the number of animals, and the owner.

PART II CLASS FREE STATUS

A State or area that achieves Class Free status is officially recognized as being free of brucellosis in cattle. This Part covers the requirements for establishing and maintaining Class Free status in a State or an area. It also covers the requirements for moving cattle from and within Class Free States and Areas.

A. Size of Area

Class Free status usually applies to an entire State. However, a State may request a two-area classification.

A State must meet all of the following specific criteria to receive approval of a two-area classification:

1. Legislative authority --Legislative authority must exist for maintaining separate areas within the State.
2. Regulatory authority --Regulatory authority must exist for maintaining separate areas within the State.
3. Resources --Resources must exist and must be committed to maintaining separate areas within the State.
4. Method --A creditable method must exist for monitoring and controlling the movement of animals across the area boundary and its effectiveness must be demonstrated. APHIS will review the procedures with the requesting State.

B. Duration of Status

A State or area will retain its Class Free status indefinitely, provided it continues to meet the requirements for Class Free status. Class Free status is automatically suspended if field strain infection is found, except when the field strain infection is found to be imported and brucellosis has not spread to other herds before the exposed animals have been returned to the State of origin or slaughtered.

Every 12 months, the States must prepare a special report summarizing their brucellosis program activities for the previous 12 months. The special report must include the following information:

- 1) herd and cattle population and the source of this information;
- 2) The dates of the reporting period;
- 3) The number of BRT rounds completed during the reporting period;
- 4) The number of MCI tests (slaughter MCI and all other MCI tests are to be reported separately);

- 5) The number of MCI reactors;
- 6) The number of MCI reactors traced by category such as:
 - o traced to a herd of origin in which reactors were found on the herd blood test
 - o traced to a herd of origin that had negative results on the herd blood test
 - o traced to out-of-State origins
 - o traced to known infected herds
- 7) The number of cows and bulls two years of age and older that were slaughtered and the number of blood samples that were collected from these animals;
- 8) The number of herds infected with field strains of Brucella during the reporting period;
- 9) The number and results of blood tests of other species of domestic animals;

(Items 1 through 9 are to be reported on revised VS Form 4-1, Application for Status. Almost all of the information required is available on VS Form 4-33D, Monthly Report on Brucellosis Eradication Activities, on file in each State.)

- 10) A narrative description of:
 - o epidemiologic surveillance investigations and results;
 - o MCI investigations and results, including the number of MCI reactors that cannot be traced because of a lack of manmade identification;
 - o MCI procedures and problems at each of the slaughter establishments that failed to collect blood samples from 95% percent of the cows and bulls two years of age and older during the reporting period;
 - o verification that other UM&R standards have been met.

Special reports that disclose apparent deficiencies will be reviewed by Veterinary Services and State officials to determine the correct status for the State. Special reports may cover any 12 consecutive months; however, no months may be unreported. If at any time a State meets the requirements for Class Free status, a State may request that it be advanced to that status and submit a special report for the previous 12 months as evidence of qualification.

All cattle herds in which brucellosis has been known to exist must be legally released from quarantine before a State is eligible for Class Free

status. In addition, all herds of other species of domestic livestock in which brucellosis has been found or suspected must be tested negative, destroyed, or quarantined, leaving no known uncontrolled foci of infection in any species at the time of classification.

C. Standards to Attain and Maintain Class Free Status

1. Surveillance

- a. Brucellosis ring test (BRT)--The brucellosis ring test must be conducted at least four times per year at approximately equal intervals. A State may increase the frequency of brucellosis ring tests to achieve more effective surveillance. An epidemiologic investigation of all herds with suspicious brucellosis ring test results must be conducted and an approved action plan developed within 15 days of the laboratory test date. If a herd blood test is necessary, it should be performed within 30 days of the laboratory test date. A State or area may lose Class Free status if the herd test is not conducted within this time period.

Patron lists must be reviewed to ensure that all dairy herds producing commercial milk have been included in at least three of the four BRT rounds per year. The quality of the samples used for the brucellosis ring test will be monitored at the time the samples are collected. The brucellosis ring test procedure will be adjusted for the size of the herd. (See Chapter 1, Part II, Section 4, C, 3.)

- b. Market Cattle Identification (MCI) program

- 1) Participation--All State or federally inspected slaughter establishments must participate in the Market Cattle Identification program. At least 95% of the cows and bulls two years of age and older must be sampled at each recognized slaughter establishment. In cases where sampling over the 12-month period falls below 95 percent for specific plants, the actions taken to correct this deficiency will be evaluated in determining status. All manmade identification (except brands and tattoos) on the cattle at the time of slaughter is to be collected and identification from each animal must accompany its blood sample to the laboratory. Failing to collect this identification makes it difficult to positively identify many market cattle reactors. If the failure to trace reactors to the herd of origin is related to the failure to properly collect manmade identification, the MCI program will be considered deficient in the State where the blood is collected.
- 2) Reactors--At least 90 percent of the MCI reactors during each 12-month period must be traced to the herd of origin. An investigation must be conducted as outlined in Chapter 1, Part 2, Section 7, D within 15 days of the time that the MCI test is performed or within 15 days of the time that the results are reported to the State animal health official or the

Veterinarian in Charge of the area involved. If States with 20 or fewer MCI reactors do not trace at least 90 percent of reactors to the herd of origin, an explanatory statement and a request for exemption from this standard may be prepared and submitted with the 12-month special report. When a herd blood test is indicated, it should be conducted within 30 days of the time the owner is officially notified of the MCI reactors. These herds are to be confined to the premises under quarantine until the herd blood test results are available and are negative. (For exceptions see Chapter 1, Part III, Section 3.) A State or area will lose status if the herds of origin of MCI reactors are not tested within six months of the time the owner is officially notified of the MCI reactor.

- 3) Reporting results--To maintain status, all MCI reactors originating in the reporting State are to be included in the 12-month report. The report must include the number of successful and unsuccessful tracebacks and the number of herds of origin that were tested. The data summarizing the successful and unsuccessful tracebacks for cattle with backtags and for cattle without backtags should be presented separately.

c. Epidemiologic surveillance

- 1) Adjacent herds--All adjacent herds or other herds having contact with imported cattle containing a reactor(s) must have an approved action plan for testing or monitoring the herd(s). These plans must be in effect within 15 days of the time reactors are found in the first herd and must include at least two herd blood tests, with the last test approximately six months after the first herd is depopulated or freed of infection. (For exceptions see Chapter 1, Part II, Section 1, H.) If there is disagreement about the necessity for testing a herd, the herd owner, the State animal health official or his representative, the designated epidemiologist, and, if requested, the herd owner's veterinarian, will consult to resolve the situation.
- 2) Epidemiologically traced herds--All herds of origin of cattle that have been sold into an affected herd and all herds receiving cattle from an affected herd should be placed under quarantine. These herds must have an approved action plan for testing or monitoring the herd(s). The action plan must be in effect within 15 days of locating the herd of origin or the recipient herd. If there is epidemiologic evidence that a herd blood test should be performed, the test should be done within 30 days. (For exceptions see Chapter 1, Part II, Section 1, H.) If there is disagreement regarding the necessity for testing a herd, the herd owner, the State animal health official or his representative, the designated epidemiologist, and, if requested, the herd owner's veterinarian, will consult to resolve the situation.

2. Herd infection rate

- a. States must remain free of bovine brucellosis resulting from infections with field strains of *Brucella* for 12 months or longer. If reactor animals are found in an imported lot of cattle they must immediately be slaughtered. If brucellosis has not spread to other herds, the entire lot of exposed cattle can be depopulated or returned to the State of origin without losing status. Infections are assumed to be caused by a field strain until veterinary officials in the State show otherwise by culture or by a complete epidemiologic investigation that excludes field strain infection.
- b. State or Federal representatives will conduct an epidemiologic investigation of each herd that has reactor cattle within 15 days to identify the potential sources of infection. All potential sources must be contacted within 15 days to determine appropriate action. If there are delays in contacting potential source herds, the State or Federal official must document any extenuating circumstances in the case report that is submitted to Veterinary Services, Hyattsville, Maryland.

3. Prevalence rate of MCI reactors --The 12-month adjusted MCI reactor prevalence rate may not exceed one reactor per 2,000 cattle tested (0.050 percent). For purposes of State or area classification, MCI reactors are defined as non-vaccinated cattle that are positive on the standard card test and vaccinated cattle that are positive on the rivanol test at 1:25 or higher.

The adjusted MCI reactor prevalence rate is calculated by deleting from the numerator the market cattle reactors that originate from known reactor herds, market cattle reactors traced to out-of-State origins, and market cattle reactors that originate from herds of origin that subsequently had a herd blood test and were found negative for brucellosis. State or Federal representatives will conduct a complete epidemiologic investigation, with appropriate tests of adjacent and contact herds, of any herds of origin of MCI reactors in which all test-eligible cattle and nonvaccinated heifers and bulls between six and 18 months of age have been eliminated by slaughter. If there are extenuating circumstances that caused the rate to be above the stated rate, they must be documented in the 12-month report. Special consideration will be given when the status of a State or area is affected by unusual or extreme marketing conditions.

4. Complying with the uniform methods and rules

- a. States must continuously comply with the requirements of the UM&R. A State's compliance will be judged by administrative review and epidemiologic evaluation.
- b. If a State fails to maintain the minimum procedural standards set forth in the UM&R, the State may be reclassified to Class A status. Before its status is lowered, the State may request a peer group review (Chapter 1, Part II, Section 1, I) at the State's expense.

The State and Federal officials in charge of program activities will be notified in writing of any apparent deficiencies that may affect the status of the State classification. In response, the State and Federal officials in charge of the program activities will determine and describe in writing the corrective actions the State will take. The response must include a schedule for making any needed corrective actions. Herd infection from field strains of Brucella in other than quarantined imported cattle or excessive adjusted market cattle reactor rates will be cause for the State to immediately lose Class Free status; the State will be reclassified to Class A status. A State may regain Class Free status by qualifying as for initial Class Free status. If appropriate, a State can regain Class Free status when it has corrected all procedural deficiencies causing the loss of status and a minimum of six months have elapsed demonstrating the effectiveness of the corrective action(s).

D. Movement of Cattle on Change of Ownership Within and From Class Free States or Areas for Certain Purposes

1. Cattle exempt from testing requirements --The following cattle from nonquarantined herds are specifically exempt from test or certificate requirements to qualify for either interstate or intrastate movements. A certificate is required for the interstate movement of other cattle from Certified Brucellosis-Free herds:
 - o steers and spayed heifers;
 - o nonvaccinated cattle under 18 months of age as evidenced by the presence of the first pair of temporary incisor teeth;
 - o official calfhood vaccinates of the dairy breeds under 20 months of age, unless they are heavy springers or have calved;
 - o official calfhood vaccinates of the beef breeds under 24 months of age as evidenced by the absence of the first pair of fully erupted permanent incisor teeth, unless they are heavy springers or have calved;
 - o other cattle moving directly to slaughter from a herd of origin; and
 - o other cattle moving directly from Certified Brucellosis-Free herds. However, a certificate is required for interstate movement of cattle from Certified Brucellosis-Free Herds that are moved for feeding or for breeding.
2. For feeding
 - a. Movements to quarantined feedlots or quarantined pastures
 - 1) Quarantined feedlots or quarantined pastures do not exist in Certified Brucellosis-Free States or areas. Therefore, no

cattle may move to Class-Free States or areas for feeding in quarantined feedlots or pastures.

- 2) Exposed cattle from quarantined herds, except steers and spayed heifers, must be "S" hot iron branded before being moved interstate to quarantined feedlots. An "S" brand permit is required for this movement.
 - 3) Test-eligible cattle from other herds, including Certified Brucellosis Free Herds, may move to quarantined feedlots in other States without test restrictions, but a certificate is required.
- b. Movement to other feedlots - The testing and documentation requirements are the same as for breeding cattle.

3. For immediate slaughter

- a. Exposed animals from a quarantined herd must be "S" hot iron branded, or "B" hot iron branded if the herd is being depopulated with indemnity, or moved in sealed vehicles directly to slaughter. A VS Form 1-27 is required.
- b. Other cattle may move to slaughter establishments or to markets for sale for immediate slaughter without being tested, if the identity of their herd of origin is maintained.

4. For breeding

- a. A certificate is required for interstate movements of test-eligible cattle from nonquarantined herds, but there are no premovement test requirements. A voluntary blood test of the cattle is recommended between 45 and 120 days after the interstate movement.
- b. Female dairy cattle born after January 1, 1984, that are four months of age and over, must be official vaccinates if they are moved into a Class B or a Class C State or area, unless they are moved directly to a recognized slaughter establishment or to a quarantined feedlot.

All female cattle born after January 1, 1984, that are four months of age and over, must be official vaccinates if they are moved into or out of a Class C State or area, unless they are moved directly to a recognized slaughter establishment or to a quarantined feedlot.

Female cattle that are eligible for official calfhood vaccination and that are required to be officially vaccinated may be moved interstate directly to a specifically approved stockyard and officially vaccinated upon arrival.

- c. It is recommended that all female breeding stock moving interstate be calfhood vaccinated.

5. Heifer calves from affected herds

All heifer calves in an affected herd, are included under the herd quarantine restrictions. If they are retained in the herd they should be calfhood vaccinated. These heifer calves may only be moved if they comply with the requirements of a, b or c of this section.

- a. The heifer calves must be "S" branded or spayed, or
- b.
 - 1) The heifer calves must be quarantined and held separate and apart from the affected adult herd after weaning until they are negative on an official test following the completion of their first calving, or
 - 2) If the heifer calves remain in the affected adult herd, the entire herd shall not be released from quarantine until all the heifer calves have matured and calved, then the entire herd must be tested negative for brucellosis to qualify for quarantine release.
- c. In commercial dairy herds, heifer calves, no more than 6 months of age, must:
 - (1) Be part of a herd that is following an approved individual herd plan (IHP), (the IHP will include adult vaccination and a lowered upper-age-limit calfhood vaccination when recommended by the designated epidemiologist), and
 - (2) Be calfhood vaccinated (at the ages provided for in the IHP or the UM&R), and
 - (3) Be identified with an official eartag prior to movement. (All male calves must also be identified with an official eartag prior to movement), and
 - (4) Be separate from the dam at no more than 7 days of age, and
 - (5) Be quarantined separate and apart from other cattle after movement from the affected herd for at least 30 days.

PART III
CLASS A STATUS

This Part covers the requirements for establishing and maintaining Class A status in a State or an area. It also covers the requirements for moving cattle from and within Class A States and areas.

A. Size of Area

Class A status usually applies to an entire State. However, a State may request a two-area classification. In addition, Part III, Section A, 5 provides for Federal quarantines of areas within a Class A State.

A State must meet all of the following specific criteria to receive approval of a two-area classification:

1. Legislative authority --Legislative authority must exist for maintaining separate areas within the State.
2. Regulatory authority --Regulatory authority must exist for maintaining separate areas within the State.
3. Resources --Resources must exist and must be committed to maintaining separate areas within the State.
4. Method --A creditable method must exist for monitoring and controlling the movement of animals across the area boundary and its effectiveness must be demonstrated. APHIS will review the procedures with the requesting State.

B. Duration of Status

A State or area will retain its Class A status indefinitely, provided it continues to meet the requirements for Class A status.

Every 12 months, the States must prepare a special report summarizing their brucellosis program activities for the previous 12 months. The special report must include the following information:

1. Herd and cattle population and the source of this information;
2. The dates of the reporting period;
3. The number of BRT rounds completed during the reporting period;
4. The number of MCI tests (slaughter MCI and all other MCI are to be reported separately);
5. The number of MCI reactors;

6. The number of MCI reactors traced by category such as:
 - o traced to a herd of origin in which reactors were found on the herd blood test
 - o traced to a herd of origin that had negative results on the herd blood test
 - o traced to out-of-State origins
 - o traced to known infected herds
7. The number of cows and bulls two years of age and older that were slaughtered and the number of blood samples that were collected from these animals;
8. The number of herds infected with field strains of Brucella during the reporting period;
9. The number and results of blood tests of other species of domestic animals;

(Items 1 through 9 are to be reported on revised VS Form 4-1, Application for Status. Almost all of the information required is available on VS Form 4-33D, Monthly Report on Brucellosis Eradication Activities, on file in each State.)

10. A narrative description of:
 - o epidemiologic surveillance investigations and results;
 - o MCI investigations and results, including the number of MCI reactors that cannot be traced because of a lack of manmade identification;
 - o MCI procedures and problems at each of the slaughter establishments that failed to collect blood samples from 95% percent of the cows and bulls two years of age and older during the reporting period; and
 - o verification that other UM&R standards have been met.

Special reports that disclose apparent deficiencies will be reviewed by Veterinary Services and State officials to determine the correct status for the State. Special reports may cover any 12 consecutive months; however, no months may be unreported. If at any time a State meets the requirements for Class A status, the State may request that it be advanced to that status. The State must submit a special report for the previous 12 months as evidence that it qualifies.

C. Standards to Attain and Maintain Class A Status

1. Surveillance

- a. Brucellosis ring test (BRT)--The brucellosis ring test must be conducted at least four times per year at approximately equal intervals. A State may increase the frequency of brucellosis ring tests to achieve more effective surveillance. An epidemiologic investigation of all herds with suspicious brucellosis ring test results must be conducted and an approved action plan developed within 15 days of the laboratory test date. If a herd blood test is necessary, it should be performed within 30 days of the laboratory test date. A State or area may not be reduced from Class A status to Class B status for failing to complete the herd blood test, if the State has taken legal action to obtain the test and active legal proceedings are in progress.

Patron lists must be reviewed to ensure that all dairy herds producing commercial milk have been included in at least three of the four BRT rounds per year. The quality of the samples used for the brucellosis ring test will be monitored at the time the samples are collected. The brucellosis ring test procedure will be adjusted for the size of the herd. (See Chapter 1, Part II, Section 4, C.)

b. Market Cattle Identification (MCI) program

1. Participation--All State or Federally-inspected slaughter establishments must participate in the Market Cattle Identification program. At least 95% of the cows and bulls two years of age and older must be sampled at each recognized slaughter establishment. In cases where sampling over the 12-month period falls below 95 percent for specific plants, the actions taken to correct this deficiency will be evaluated in determining status. All manmade identification (except brands and tattoos) on cows and bulls two years of age and older at the time of slaughter is to be collected and individual identification from each animal must accompany its blood sample to the laboratory. Failing to collect this identification makes it difficult to positively identify many market cattle reactors. If the failure to trace reactors to the herd of origin is related to the failure to properly collect manmade identification, the MCI program will be considered deficient in the State where the blood is collected.
2. Reactors--At least 90 percent of the MCI reactors during each 12-month period must be traced to the herd of origin and an investigation conducted as outlined in Chapter 1, Part 2, Section 7, D within 15 days of the time that the MCI test is performed or within 15 days of the time that the test results are reported to the State animal health official or the Veterinarian in Charge of the area involved. If States with 20 or fewer MCI reactors do not trace at least 90 percent of reactors to the herd of origin, an explanatory statement and a request for exemption from this standard may be prepared and

submitted with the 12-month special report. When a herd blood test is indicated, it should be conducted within 30 days of the time the owner is officially notified of the MCI reactors. Otherwise, the herds are to be confined to the premises under quarantine.

All MCI reactor herds should be blood tested within 45 days of the time the owner is officially notified of the reactor, unless an approved action plan is on file which provides for a herd test after a longer interval. (For exceptions see Chapter 1, Section 1, H.) Class A status may be reduced to Class B status if the herds of origin of MCI reactors that are positive on the rivanol or CF test are considered suspicious after a complete epidemiologic investigation and are not tested within six months of the time the owner is officially notified of the MCI reactor. A State or area may not lose status if the State has taken legal action to obtain a test and active legal proceedings are in progress.

3. Reporting results--To maintain or to advance status, all MCI reactors originating in the reporting State are to be reported in the 12-month report. The report must include the number of successful and unsuccessful tracebacks and the number of herds of origin that were tested. The data summarizing the successful and unsuccessful tracebacks for cattle with backtags and for cattle without backtags should be presented separately.

c. Epidemiologic Surveillance

1. Adjacent herds--All adjacent herds or other herds having contact with cattle from an affected herd must have an approved action plan for testing or monitoring the herd(s). These plans must be in effect within 15 days of the time infection is found. If there is disagreement about the necessity for testing a herd, the herd owner, the State Animal Health Official or his representative, the designated epidemiologist, and, if requested, the herd owner's veterinarian, will consult to resolve the situation. The initial herd test of those herds requiring a test should be conducted within 30 days of the time infection is found in the first herd. (For exceptions see Chapter 1, Part II, Section H.) A State or area may not be reduced from Class A to Class B status if the State has taken legal action to obtain a test and active legal proceedings are in progress.
2. Epidemiologically traced herds--All herds of origin of cattle that have been sold into an affected herd and all herds receiving cattle from an affected herd must have an approved action plan for testing or monitoring the herd(s). The approved action plan must be in effect within 15 days of locating the herd of origin or the recipient herd. If there is disagreement regarding the necessity for testing a herd, the herd owner, the State Animal Health Official or his

representative, the designated epidemiologist, and, if requested, the herd owner's veterinarian, will consult to resolve the situation. The initial herd test of those herds requiring a test should be conducted within 30 days of the time that association with the affected herd is discovered. (For exceptions, see Chapter 1, Part II, Section H.) States or areas may not be reduced from Class A to Class B status if the State has taken legal action to obtain a test and active legal proceedings are in progress.

2. Herd infection rate

- a. States must not have an accumulated 12-month herd infection rate from field strains of *Brucella abortus* of more than 0.250 percent or 2.5 herds per 1,000, except in States with 10,000 or fewer herds. Infection with field strains must be assumed in each case until veterinary officials in the State show otherwise by culture or by complete epidemiologic investigation. Each infected herd must be enrolled in a program that results in eliminating *Brucella* infection or in depopulating the herd. Herds proven to be infected with Strain 19 are not included in determining the herd infection rate but the infected animals are to be sold for immediate slaughter. Representatives of the Chief Staff Veterinarian, Domestic Program Support, will conduct a special review to determine if a State with a herd infection rate of more than 0.250 percent but with less than 10,000 herds should qualify for Class A status. This evaluation will include, but not be limited to, the following factors:
 - 1) The number of reactor herds assumed (or proven) to be due to field strains of *Brucella* ;
 - 2) The location of the infected herds and the distances between them, i.e., clusters of infected herds or scattered infected herds;
 - 3) Whether infections have a common source(s) or are separate outbreaks and whether secondary spread has occurred;
 - 4) Whether State policies and authorities are adequate and are applied to control and eliminate the outbreak(s);
 - 5) Whether the herd quarantine(s) and its enforcement is adequate;
 - 6) Number of additional herds at risk of becoming infected;
 - 7) Whether depopulation has been used to contain the outbreak(s); and
 - 8) The effectiveness of herd management practices in the infected herds to control the spread of disease within the herd and to other herds at risk.

- b. An epidemiologic investigation of each herd with reactor cattle must be conducted within 15 days to identify the potential sources of infection. All such potential sources must be contacted within an additional 15 days to determine appropriate action. (For exceptions see Chapter 1, Part II, Section 1, H.)

3. Prevalence rate of MCI reactors

The 12-month adjusted MCI reactor prevalence rate may not exceed one reactor per 1,000 cattle tested (0.100 percent). For purposes of State or area classification, MCI reactors are defined as non-vaccinated cattle that are positive on the standard card test and vaccinated cattle that are positive on the rivanol test at 1:25 or higher.

The adjusted MCI reactor prevalence rate is calculated by deleting from the numerator the market cattle reactors that originate from known reactor herds, market cattle reactors traced to out-of-State origins, and market cattle reactors that originate from herds of origin that subsequently had a herd blood test and were found negative for brucellosis. State and Federal personnel will conduct a complete epidemiologic investigation, with appropriate tests of adjacent and contact herds, on any herds of origin of MCI reactors in which all test-eligible cattle and nonvaccinated heifers and bulls between six and 18 months of age have been eliminated by slaughter. If there are extenuating circumstances that cause the rate to be above the stated rate, they must be documented in the 12-month report. Special consideration affected by unusual or extreme marketing conditions.

4. Complying with the Uniform Methods and Rules

- a. States must continuously comply with the requirements of the UM&R. A State's compliance will be judged by administrative review and epidemiologic evaluation.
- b. If a State fails to maintain the minimum procedural standards set forth in the UM&R, the State may be reclassified to Class B status. Before its status is lowered, the State may request a peer group review (Chapter 1, Part II, Section 1, I) at the State's expense. The State and Federal officials in charge of program activities will be notified in writing of any apparent deficiencies that may affect the status of the State classification. In response, the State and Federal officials in charge of the program activities will determine and describe in writing the corrective actions that the State will take. The response must include a schedule for taking any needed corrective actions. An excessive herd infection rate due to field strains of *Brucella* or an excessive adjusted market cattle reactor rate will be cause for the State to immediately lose Class A status; the State will be reclassified to Class B status. A State may regain Class A status by qualifying as for initial Class A status. If appropriate, a State can regain Class A status when it has corrected all procedural deficiencies causing the loss of status and a minimum of six months have elapsed demonstrating the effectiveness of the corrective action(s).

D. Movement of Cattle within and from Class A States or Areas for Certain Purposes

1. Cattle exempt from testing requirements --The following cattle from nonquarantined herds are specifically exempt from test or certificate requirements to qualify for either interstate or intrastate movements. A certificate is required for the interstate movement of other cattle from Certified Brucellosis-Free herds:
 - o steers and spayed heifers;
 - o nonvaccinated cattle under 18 months of age as evidenced by the presence of the first pair of temporary incisor teeth;
 - o official calfhood vaccinates of the dairy breeds under 20 months of age, unless they are heavy springers or have calved;
 - o official calfhood vaccinates of the beef breeds under 24 months of age as evidenced by the absence of the first pair of fully erupted permanent incisor teeth, unless they are heavy springers or have calved;
 - o other cattle moving directly to slaughter from a herd of origin; and
 - o other cattle moving directly from Certified Brucellosis-Free herds. However, a certificate is required for interstate movement of cattle from Certified Brucellosis-Free Herds that are moved for feeding or for breeding.
2. For feeding
 - a. Movements to quarantined feedlots or quarantined pastures--
 - 1) Quarantined feedlots or quarantined pastures do not exist in Class-Free States or areas. Therefore, no cattle may move to quarantined feedlots or pastures in Class Free States or areas.
 - 2) Exposed cattle from quarantined herds, except steers and spayed heifers, must be "S" hot iron branded before being moved intrastate or interstate to quarantined feedlots. An "S" brand permit is required for this movement.
 - 3) Untested test-eligible cattle from nonquarantined herds may move intrastate to quarantined feedlots or quarantined pastures, and interstate to quarantined feedlots, without test restrictions, if the herd of origin can be identified by means of identification tags, backtags, or brands. A certificate is required for interstate movement.
 - b. Movement to other feedlots--The testing and documentation requirements are the same as for breeding cattle.

3. For immediate slaughter

- a. Exposed cattle from quarantined herds must be "S" hot iron branded and moved with "S" brand permit to recognized slaughter establishments or to Specifically Approved Stockyards or State approved livestock markets to be sold for immediate slaughter. Instead of "S" branding, cattle may move directly to slaughter from a Specifically Approved Stockyard or a State approved livestock market or from a herd of origin in sealed vehicles accompanied by an "S" brand permit. Exceptions to the "S" branding and "S" brand permits are allowed for finished fed heifers moving directly to immediate slaughter at recognized slaughter establishments and for exposed cattle in cases where moving them to slaughter does not require rail or motor carrier transportation.
- b. Cattle from Certified Brucellosis-Free herds may move to recognized slaughter establishments or to Specifically Approved Stockyards or State approved livestock markets to be sold for immediate slaughter without being tested, if the identity of the herd of origin is maintained.
- c. Cattle from other nonquarantined herds may move to recognized slaughter establishments or to Specifically Approved Stockyards or State approved livestock markets to be sold for immediate slaughter without being tested, if the identity of the nonquarantined herd is maintained.

4. For breeding

- a. Test-eligible cattle from Certified Brucellosis-Free Herds may move without testing if the identity of the herd of origin is maintained. A certificate is required for interstate movement. A voluntary test is recommended 45-120 days after interstate movement.
- b. Test-eligible cattle from other nonquarantined herds may move intrastate without being tested. A voluntary test is recommended 45-120 days after movement.
- c. Test eligible cattle originating in other nonquarantined herds may move interstate from a farm of origin directly to a farm of destination, if they have a negative test within 30 days before interstate movement and are accompanied by a certificate. Cattle may be moved interstate from a farm of origin without a certificate directly to a Specifically Approved Stockyard for the required negative test. A certificate is required for those test negative cattle that subsequently move interstate from a Specifically Approved Stockyard. A 45-120 day postmovement test is strongly recommended.
- d. The testing requirements of D, 3, c for interstate movements are not required if all of the following conditions apply:

- 1) The cattle being moved are from a herd that is not known to be affected, and
- 2) The cattle being moved have not changed ownership and are not changing ownership, and
- 3) The cattle are from herds that have had a complete negative herd blood test within 12 months, and
- 4) Any cattle that were added to the herd after the herd test were also tested negative, and
- 5) The cattle being moved have not come in contact with cattle not meeting these requirements.

The requirement for a complete herd blood test, including additions, within the previous 12 months, may be waived if officials in each State concur in writing.

The intent of this exception is to allow grazing associations, farmers, and ranchers to follow normal ranching operations when crossing jurisdictional boundaries during these movements, without subjecting their cattle to unnecessary handling and testing.

- e. Female dairy cattle born after January 1, 1984, that are four months of age and older, must be official vaccinates if they are moved into a Class B or a Class C State or area, unless they are moved directly to a recognized slaughter establishment or to a quarantined feedlot.

All female cattle born after January 1, 1984, that are four months of age and older, must be official vaccinates if they are moved into or out of a Class C State or area, unless they are moved directly to a recognized slaughter establishment or to a quarantined feedlot.

Female cattle that are eligible for official calfhood vaccination and that are required to be officially vaccinated may be moved interstate directly to a Specifically Approved Stockyard and officially vaccinated upon arrival.

- f. It is recommended that all female breeding stock moving interstate be calfhood vaccinated.

5. Heifer calves from affected herds

All heifer calves in an affected herd, are included under the herd quarantine restrictions. If they are retained in the herd they should be calfhood vaccinated. These heifer calves may only be moved if they comply with the requirements of a, b or c of this section.

- a. The heifer calves must be "S" branded or spayed, or

- b.
 - 1) The heifer calves must be quarantined and held separate and apart from the affected adult herd after weaning until they are negative on an official test following the completion of their first calving, or
 - 2) If the heifer calves remain in the affected adult herd, the entire herd shall not be released from quarantine until all the heifer calves have matured and calved, then the entire herd must be tested negative for brucellosis to qualify for quarantine release.
- c. In commercial dairy herds, heifer calves, no more than 6 months of age, must:
 - (1) Be part of a herd that is following an approved individual herd plan (IHP), (the IHP will include adult vaccination and a lowered upper-age-limit calfhood vaccination when recommended by the designated epidemiologist), and
 - (2) Be calfhood vaccinated (at the ages provided for in the IHP or the UM&R), and
 - (3) Be identified with an official eartag prior to movement. (All male calves must also be identified with an official eartag prior to movement), and
 - (4) Be separate from the dam at no more than 7 days of age, and
 - (5) Be quarantined separate and apart from other cattle after movement from the affected herd for at least 30 days.

PART IV
CLASS B STATUS

This Part covers the requirements for establishing and maintaining Class B status in a State or an area. It also covers the requirements for moving cattle from within Class B States and areas.

A. Size of Area

Class B status usually applies to an entire State. However, a State may request a two-area classification.

A State must meet all of the following specific criteria to receive approval of a two-area classification:

1. Legislative authority --Legislative authority must exist for maintaining separate areas within the State.
2. Regulatory authority --Regulatory authority must exist for maintaining separate areas within the State.
3. Resources --Resources must exist and must be committed to maintaining separate areas within the State.
4. Method --A creditable method must exist for monitoring and controlling the movement of animals across the area boundary and its effectiveness must be demonstrated. APHIS will review the procedures with the requesting State.

B. Duration of Status

A State or area will retain its Class B status indefinitely provided it continues to meet the requirements for Class B status.

Every 12 months, the States must prepare a special report summarizing their brucellosis program activities for the previous 12 months. The special report must include the following information:

1. Herd and cattle population and the source of this information;
2. The dates of the reporting period;
3. The number of BRT rounds completed during the reporting period;
4. The number of MCI tests (slaughter MCI and all other MCI tests are to be reported separately);
5. The number of MCI reactors;
6. The number of MCI reactors traced by category such as:
 - o traced to a herd of origin in which reactors were found on the herd

blood test

- o traced to a herd of origin which had negative results on the herd blood test
- o traced to out-of-State origins
- o traced to known infected herds

7. The number of cows and bulls two years of age and older that were slaughtered and the number of blood samples that were collected from these animals;
8. The number of herds infected with field strains of Brucella during the reporting period;
9. The number and results of blood tests of other species of domestic animals;

(Items 1 through 9 are to be reported on revised VS Form 4-1, Application for Status. Almost all of the information required is available on VS Form 4-33D, Monthly Report on Brucellosis Eradication Activities, on file in each State.)

10. A narrative description of:

- o epidemiologic surveillance investigations and results;
- o MCI investigations and results, including the number of MCI reactors that cannot be traced because of a lack of manmade identification;
- o MCI procedures and problems at each of the slaughter establishments that failed to collect blood samples from 95% of the cows and bulls two years of age and older during the reporting period; and
- o verification that other UM&R standards have been met.

Special reports that disclose apparent deficiencies will be reviewed by Veterinary Services and State officials to determine the correct status for the State. Special reports may cover any 12 consecutive months; however, no months may be unreported. If at any time, a State meets the requirements for Class A or higher status, the State may request that it be advanced to that status. The State must submit a special report for the previous 12 months as evidence that it qualifies.

C. Standards to Attain and Maintain Class B Status

1. Surveillance

- a. Brucellosis Ring Test (BRT)--The brucellosis ring test must be conducted at least four times per year at approximately equal intervals. A State may increase the frequency of brucellosis ring tests to achieve more effective surveillance. An epidemiologic

investigation of all herds with suspicious brucellosis ring test results must be conducted and an approved action plan developed within 30 days of the laboratory test date. If a herd blood test is necessary, it should be performed within 30 days after the approved action plan is prepared. A State or area may not be reduced from Class B status to Class C status for failure to complete the herd blood test, if the State has taken legal action to obtain the test and active legal proceedings are in progress.

Patron lists must be reviewed to ensure that all dairy herds producing commercial milk have been included in at least three of the four BRT rounds per year. The quality of the samples used for the brucellosis ring test will be monitored at the time the samples are collected. The brucellosis ring test procedure will be adjusted for the size of the herd. (See Chapter 1, Part II, Section 4, C.)

b. Market Cattle Identification (MCI) program

1) Participation

a) All recognized slaughter establishments must participate in the Market Cattle Identification program. At least 95% of the cows and bulls two years of age and older must be sampled at each recognized slaughter establishment. In cases where sampling over the 12-month period falls below 95 percent for specific plants, the actions taken to correct this deficiency will be evaluated in determining status. All manmade identification (except brands and tattoos) on cows and bulls two years of age and older at the time of slaughter is to be collected and identification from each animal must accompany its blood sample to the laboratory. Failing to collect this identification makes it difficult to positively identify many market cattle reactors. If the failure to trace reactors to the herd of origin is related to the failure to properly collect manmade identification, the MCI program will be considered deficient in the State where the blood is collected.

b) All other first points of concentration must have facilities to test all test-eligible cattle received directly from a farm of origin. All test-eligible cattle must be tested at their first point of concentration regardless of their final destination.

2) Reactors--At least 80 percent of MCI reactors during each 12-month period must be traced to the herd of origin and an investigation conducted as outlined in Chapter 1, Part II, Section 7, D within 30 days of the time that the MCI test is performed or within 30 days of the time that the MCI test results are reported to the State animal health official or Veterinarian in Charge of the area involved. When a herd

blood test is indicated, the MCI reactor herd shall be blood tested within 45 days from the time the owner is officially notified of the reactor, unless an approved action plan is on file which provides for a herd test after a longer interval. However, if the herd blood test is not conducted within the first 30 days from the time the owner is officially notified of the MCI reactor, the herds must be confined to the premises under quarantine. (For exceptions, see Chapter 1, Part II, Section 1, H).

If States with 20 or fewer MCI reactors cannot trace at least 80 percent of reactors to the herd of origin, an explanatory statement and a request for exemption from this standard may be prepared and submitted with the 12-month special report.

Class B status may be reduced to Class C status if the herds of origin of market cattle reactors that are positive on the rivanol or CF test are considered suspicious after a complete epidemiologic investigation and are not tested within six months of the time the owner is officially notified of the MCI reactor. A State or area may not lose status if the State has taken legal action to obtain test and active legal proceedings are in progress.

- 3) Reporting results--To maintain or to advance status, all MCI reactors originating in the reporting State are to be reported in the 12-month report. The report must include the number of successful and unsuccessful tracebacks and the number of herds of origin that were tested. The data summarizing the successful and unsuccessful tracebacks for cattle with backtags and for cattle without backtags should be presented separately.

c. Epidemiologic surveillance

- 1) Adjacent herds--All adjacent herds or other herds having contact with cattle from the affected herd must have an approved action plan for testing or monitoring the herd(s). These plans must be in effect within 45 days of the time infection is found. If there is disagreement about the necessity for testing a herd, the herd owner, the State Animal Health Official or his representative, the designated epidemiologist, and, if requested, the herd owner's veterinarian, will consult to resolve the situation. The initial herd blood test of those herds requiring a test should be conducted within 45 days of the time infection is found in the first herd. (For exceptions see Chapter 1, Part II, Section 1, H.) A State or area may not be reduced from Class B to Class C status if the State has taken legal action to obtain a test and active legal proceedings are in progress.
- 2) Epidemiologically traced herds--All herds of origin of cattle that have been sold into an affected herd and all herds receiving cattle from an affected herd must have an approved

action plan for testing or monitoring the herd(s). The approved action plan must be in effect within 45 days of locating the herd of origin or the recipient herd. If there is disagreement regarding the necessity for testing a herd, the herd owner, the State Animal Health Official or his representative, the designated epidemiologist, and if requested, the herd owner's veterinarian, will consult to resolve the situation. The initial herd blood test of those herds requiring a test should be conducted within 60 days of the time that association with the infected herd is discovered. (For exceptions, see Chapter 1, Part II, Section 1, H.) States or areas may not be reduced from Class B to Class C status if the State has taken legal action to obtain a test and active legal proceedings are in progress.

2. Herd infection rate

- a. States must not have an accumulated 12-month herd infection rate from field strains of *Brucella* of more than 1.500 percent or 15 herds per 1,000, except in States with 1,000 or fewer herds. Infection with field strains must be assumed in each case until veterinary officials in the State show otherwise by culture or by complete epidemiologic investigation. Representatives of the Chief Staff Veterinarian, Domestic Program Support, will conduct a special review to determine if a State with a herd infection rate of more than 1.500 percent but with less than 1,000 herds should qualify for Class B status. This evaluation will include, but not be limited to, the following factors:
 - 1) The number of reactor herds assumed (or proven) to be due to field strains of *Brucella* ;
 - 2) The location of the infected herds and the distances between them, i.e., clusters of infected herds or scattered infected herds;
 - 3) Whether infections have a common source(s) or are separate outbreaks and whether secondary spread has occurred;
 - 4) Whether State policies and authorities are adequate and are applied to control and eliminate the outbreak(s);
 - 5) Whether the herd quarantine(s) and its enforcement is adequate;
 - 6) The number of additional herds at risk of becoming infected;
 - 7) Whether depopulation has been used to contain the outbreak(s); and
 - 8) The effectiveness of herd management practices in the infected herds to control the spread of disease within the herd and to other herds at risk.

- b. An epidemiologic investigation of each herd with reactor cattle must be conducted within 45 days to identify the potential sources of infection. All such potential sources must be contacted within an additional 30 days to determine appropriate action. (For exceptions see Chapter 1, Part II, Section 1, H.)
3. Prevalence rate of MCI reactors --The 12-month adjusted MCI reactor prevalence rate may not exceed three reactors per 1,000 cattle tested (0.300 percent). For purposes of State or area classification, MCI reactors are defined as nonvaccinated cattle positive on the standard card test, and vaccinated cattle positive on the rivanol test at 1:25 or higher. The adjusted MCI reactor prevalence rate is calculated by deleting from the numerator the market cattle reactors that originate from known reactor herds, market cattle reactors traced to out-of-State origins, and market cattle reactors that originate from herds of origin that subsequently had a herd blood test and were found negative for brucellosis.

The adjusted MCI reactor prevalence rate used to distinguish Class B from Class C Status will be reduced from 0.300 percent to 0.200 percent, provided the annual review of the Brucellosis Committee of the United States Animal Health Association supports this change.

State or Federal representatives will conduct a complete epidemiologic investigation, with appropriate tests of adjacent and contact herds, on any herds of origin of MCI reactors in which all test-eligible cattle and nonvaccinated heifers and bulls between six and 18 months of age have been eliminated by slaughter. Special consideration will be allowed when the status of a State or area is affected by unusual or extreme marketing conditions.

4. Complying with the Uniform Methods and Rules

- a. States must continuously comply with the requirements of the UM&R. A State's compliance will be judged by administrative review and epidemiologic evaluation.
- b. A State must make continued progress in reducing the prevalence of brucellosis as determined by epidemiologic evaluation covering a two-year period of program operation.
- c. If a State fails to maintain the minimum procedural standards set forth in the UM&R, the State may be reclassified to Class C status. Before its status is lowered, the State may request a peer group review (Chapter 1, Part II, Section 1, I) at the State's expense. The State and Federal officials in charge of program activities will be notified in writing of any apparent deficiencies that may affect the status of the State classification. In response, the State and Federal officials in charge of the program activities will determine and describe in writing the corrective actions that the State will take. The response must include a schedule for making any needed corrective actions. An excessive herd infection rate due to field strains of *Brucella* or an excessive adjusted

market cattle reactor rate will be cause for the State to immediately lose Class B status; the State will be reclassified to Class C status. A State may regain Class B status by qualifying as for initial Class B status. If appropriate, a State can regain Class B status when it has corrected all procedural deficiencies causing the loss of status and a minimum of six months have elapsed demonstrating the effectiveness of the corrective action(s).

D. Movement of Cattle within and from Class B States or Areas for Certain Purposes

1. Cattle exempt from testing requirements --The following cattle from nonquarantined herds are specifically exempt from test or certificate requirements to qualify for either interstate or intrastate movements. A certificate is required for the interstate movement of other cattle from Certified Brucellosis-Free herds:
 - o steers and spayed heifers;
 - o nonvaccinated cattle under 18 months of age as evidenced by the presence of the first pair of temporary incisor teeth;
 - o Official calfhood vaccinates of the dairy breeds under 20 months of age, unless they are heavy springers or have calved;
 - o official calfhood vaccinates of the beef breeds under 24 months of age as evidenced by the absence of the first pair of fully erupted permanent incisor teeth, unless they are heavy springers or have calved;
 - o other cattle moving directly to slaughter from the herd of origin; and
 - o other cattle moving directly from Certified Brucellosis-Free herds. However, a certificate is required for interstate movement of cattle from Certified Brucellosis-Free Herds that are moved for feeding or for breeding.
2. For feeding
 - a. Movements to quarantined feedlots or quarantined pastures--
 - 1) Quarantined feedlots do not exist in Class-Free States or areas. Therefore, no cattle may move to quarantined feedlots or pastures in Class Free states or areas.
 - 2) Exposed cattle from quarantined herds, except steers and spayed heifers, must be "S" hot iron branded before being moved interstate to quarantined feedlots. An "S" brand permit is required for this movement.
 - 3) Test-eligible cattle from nonquarantined herds (excluding

Certified Brucellosis-Free Herds) must be tested within 30 days before movement, or be "S" hot iron branded and accompanied by an "S" brand permit. These cattle may be moved to a quarantined feedlot directly from a herd of origin without being accompanied by an "S" brand permit if they are "S" branded upon arrival at the quarantined feedlot. They may be moved directly from a herd of origin to a Specifically Approved Stockyard to be sold to a quarantined feedlot without being "S" branded and without being accompanied by an "S" brand permit. Test-eligible cattle moving interstate on an official negative test must have a certificate.

- b. Movement to other feedlots--The testing and documentation requirements are the same as for breeding cattle.

3. For immediate slaughter

- a. Exposed cattle from quarantined herds must be "S" hot iron branded and moved with "S" brand permit to recognized slaughter establishments or to Specifically Approved Stockyards or State approved livestock markets to be sold for immediate slaughter. Instead of "S" branding, cattle may move directly to slaughter from either a Specifically Approved Stockyard or a State approved livestock market or from a herd of origin in sealed vehicles accompanied by an "S" brand permit. Exceptions to the "S" branding and "S" brand permit requirements are allowed for finished fed heifers moving directly to immediate slaughter at recognized slaughter establishments and for exposed cattle in cases where moving them to slaughter does not require rail or motor carrier transportation.
- b. Cattle from Certified Brucellosis-Free herds may move to recognized slaughter establishments or to Specifically Approved Stockyards or State approved livestock markets to be sold for immediate slaughter without being tested if the identity of the herd of origin is maintained.
- c. Test-eligible cattle originating in other nonquarantined herds may move directly to recognized slaughter establishments or to Specifically Approved Stockyards or to State approved livestock markets to be sold for immediate slaughter without "S" hot iron brand or "S" brand permit. To move from either the Specifically Approved Stockyards or State approved livestock market to slaughter, the cattle must be "S" branded and must be accompanied by "S" brand permits. Instead of "S" branding, cattle may move directly to slaughter from either a Specifically Approved Stockyard or State approved livestock market in sealed vehicles accompanied by an "S" brand permit or they may be tested negative within 30 days before movement.
- d. Test-eligible cattle originating from dealers' concentration points for slaughter must be "S" hot iron branded and must move with "S" brand permit to a recognized slaughter establishment, or through a

Specifically Approved Stockyard or State approved livestock market to be sold for slaughter. Instead of "S" branding, cattle may move directly to slaughter from those livestock markets in sealed vehicles accompanied by an "S" brand permit or they may be tested negative within 30 days before movement. An exception to the "S" branding and "S" brand permit is allowed for test-eligible untested cattle, in cases where moving them to slaughter does not involve transportation by rail or motor carrier.

4. For breeding

- a. Test-eligible cattle from Certified Brucellosis-Free Herds may move without testing if the identity of the herd of origin is maintained. A certificate is required for interstate movement. It is recommended that the cattle be tested at the destination 45-120 days after movement.
- b. Test-eligible cattle from other nonquarantined herds may move intrastate if they have a negative test within 30 days before movement. The negative test may be performed at Specifically Approved Stockyards or State approved livestock markets that have approved laboratory facilities for testing. A retest at the destination 45-120 days after movement is strongly recommended. No certificate is required.
- c. Test-eligible cattle from other nonquarantined herds may move interstate if they have a negative test within 30 days before interstate movement and are accompanied by a certificate which includes the test date and test results. A permit for entry is required from the receiving State before movement if they are moved from the nonquarantined herd directly to a herd of destination. Cattle may be moved interstate from a herd of origin without a certificate and permit for entry if they go directly to a Specifically Approved Stockyard for the required negative test. A certificate is required for those test-negative cattle that subsequently move interstate from a Specifically Approved Stockyard. A permit for entry is required from the receiving State before movement from the stockyard. The cattle must be quarantined at destination and retested 45-120 days after movement.
- d. The testing requirements of D, 4, b and c for intrastate and interstate movements are not required if all of the following conditions apply:
 - 1) The cattle being moved are from a herd that is not known to be affected, and
 - 2) The cattle being moved have not changed ownership and are not changing ownership, and
 - 3) The cattle are from a farm of origin and are negative to a herd blood test within 12 months of movement, and

- 4) Any cattle that were added to the herd after the herd test were also tested negative within 30 days prior to the date the cattle were added to the herd, and
- 5) The cattle being moved have not come in contact with cattle not meeting these requirements.
- 6) The cattle are accompanied by a document which shows the dates and results of the herd blood tests and the name of the laboratory that conducted the test.

The requirement for a complete herd blood test, including additions, within the previous 12 months, may be waived if officials in each State concur in writing.

The intent of this exception is to allow grazing associations, farmers, and ranchers to follow normal ranching operations when crossing jurisdictional boundaries during these movements, without subjecting their cattle to unnecessary handling and testing.

- e. Female dairy cattle born after January 1, 1984, that are four months of age and older, must be official vaccinates if they are moved into or out of a Class B State or area, unless they are moved directly to a recognized slaughter establishment or to a quarantined feedlot.

All female cattle born after January 1, 1984, that are four months of age and older, must be official vaccinates if they are moved into or out of a Class C State or area, unless they are moved directly to a recognized slaughter establishment or to a quarantined feedlot.

Female cattle that are eligible for official calfhood vaccination and required to be officially vaccinated may be moved interstate directly to a Specifically Approved Stockyard and officially vaccinated upon arrival at the Specifically Approved Stockyard.

- f. It is recommended that all female breeding stock moving interstate, especially from higher incidence states, be calfhood vaccinated.

5. Heifer calves from affected herds

All heifer calves in an affected herd, are included under the herd quarantine restrictions. If they are retained in the herd they should be calfhood vaccinated. These heifer calves may only be moved if they comply with the requirements of a, b, c or d of this section.

As of October 1, 1988, the movement of calves from affected herds in Class B States will be terminated. As of October 1, 1990, no cattle may be moved, from Class B States that are not meeting the standards for progress or that did not meet the standards at any time between October 1, 1988, and October 1, 1990, except steers, spayed heifers, "S" branded cattle, or cattle from certified Free herds.

- a. The heifer calves must be "S" branded or spayed, or
- b.
 - 1) The heifer calves must be quarantined and held separate and apart from the affected adult herd after weaning until they are negative on an official test following the completion of their first calving, or
 - 2) If the heifer calves remain in the affected adult herd, the entire herd shall not be released from quarantine until all the heifer calves have matured and calved, then the entire herd must be tested negative for brucellosis to qualify for quarantine release.
- c. In commercial dairy herds, heifer calves, no more than 6 months of age, must:
 - (1) Be part of a herd that is following an approved individual herd plan (IHP), (the IHP will include adult vaccination and a lowered upper-age-limit calfhood vaccination when recommended by the designated epidemiologist), and
 - (2) Be calfhood vaccinated (at the ages provided for in the IHP or the UM&R), and
 - (3) Be identified with an official eartag prior to movement. (All male calves must also be identified with an official eartag prior to movement), and
 - (4) Be separated from the dam at no more than 7 days of age, and
 - (5) Be quarantined separate and apart from other cattle after movement from the affected herd for at least 30 days, or
- d. The heifer calves that are no more than 8 months of age must:
 - (1) Be part of a herd that is following an approved individual herd plan (IHP), (the IHP will include adult vaccination and a lowered upper-age-limit calfhood vaccination when recommended by the designated epidemiologist), and
 - (2) Be calfhood vaccinated (at the age provided for in the IHP or the UM&R).

6. Testing at First Point of Concentration

All test-eligible cattle must be tested at their first point of concentration regardless of their final destination.

PART V
CLASS C STATUS

This Part covers the requirements for maintaining Class C Status in a State or an area. It also covers the requirements for moving cattle from and within Class C States and areas.

A. Size of Area

Class C status usually applies to an entire State. However, a State may request a two-area classification.

A State must meet all of the following specific criteria to receive approval of a two-area classification:

1. Legislative authority --Legislative authority must exist for maintaining separate areas within the State.
2. Regulatory authority --Regulatory authority must exist for maintaining separate areas within the State.
3. Resources --Resources must exist and must be committed to maintaining separate areas within the State.
4. Method --A creditable method must exist for monitoring and controlling the movement of animals across the area boundary and its effectiveness must be demonstrated. APHIS will review the procedures with the requesting State.

B. Duration of Status

A State or area will retain its Class C status indefinitely provided it continues to meet the requirements for Class C status.

Every 12 months, the States must prepare a special report summarizing their brucellosis program activities for the previous 12 months. The special report must include the following information:

1. Herd and cattle population and the source of this information;
2. The dates of the reporting period;
3. The number of BRT rounds completed during the reporting period;
4. The number of MCI tests (slaughter MCI and all other MCI tests are to be reported separately);
5. The number of MCI reactors;
6. The number of MCI reactors traced by category such as:

- o traced to a herd of origin in which reactors were found on the herd blood test
 - o traced to a herd of origin which had negative results on the herd blood test
 - o traced to out-of-State origins
 - o traced to known infected herds
7. The number of cows and bulls two years of age and older that were slaughtered and the number of blood samples that were collected from these animals;
 8. The number of herds infected with field strains of Brucella during the reporting period;
 9. The number and results of blood tests of other species of domestic animals;
- (Items 1 through 9 are to be reported on revised VS Form 4-1, Application for Status. Almost all of the information required is available on VS Form 4-33D, Monthly Report on Brucellosis Eradication Activities, on file in each State.)
10. A narrative description of:
 - o epidemiologic surveillance investigations and results;
 - o MCI investigations and results, including the number of MCI reactors that cannot be traced because of a lack of manmade identification;
 - o MCI procedures and problems at each of the slaughter establishments that failed to collect blood samples from 95% of the cows and bulls two years of age and older during the reporting period; and
 - o verification that the other UM&R standards have been met.

Special reports that disclose apparent deficiencies will be reviewed by Veterinary Services and State officials to determine the correct status for the State. Special reports may cover any 12 consecutive months; however, no months may be unreported. If at any time a State meets the requirements for Class B status, the State may request that it be advanced to that status. The State must submit a special report for the previous 12 months as evidence of qualification.

C. Standards to Maintain Class C Status

1. Surveillance

- a. Brucellosis Ring Test (BRT)--The brucellosis ring test must be conducted at least four times per year at approximately equal intervals. A State may increase the frequency of brucellosis ring

tests to achieve more effective surveillance. An epidemiologic investigation of all herds with suspicious brucellosis ring test results must be conducted and an approved action plan developed within 30 days of the laboratory test date. If a herd blood test is necessary, it should be performed within 30 days after the approved action plan is prepared.

Patron lists must be reviewed to ensure that all dairy herds producing commercial milk have been included in at least three of the four BRT rounds per year. The quality of the samples used for the milk ring test will be monitored at the time the samples are collected. The brucellosis ring test procedure will be adjusted for the size of the herd. (See Chapter 1, Part II, Section 4, C.)

b. Market Cattle Identification (MCI) program

1) Participation

- a) All recognized slaughter establishments must participate in the Market Cattle Identification program. At least 95% of the cows and bulls two years of age and older must be sampled at each recognized slaughter establishment. In cases where sampling over the 12-month period falls below 95 percent for specific plants, the actions taken to correct this deficiency will be evaluated in determining status. All manmade identification (except brands and tattoos) on cows and bulls two years of age and older at the time of slaughter is to be collected and identification from each animal must accompany its blood sample to the laboratory. Failing to collect this identification makes it difficult to positively identify many market cattle reactors. If the failure to trace reactors to the herd of origin is related to the failure to properly collect manmade identification, the MCI program will be considered deficient in the State where the blood is collected.
- b) All other first points of concentration must have facilities to test all test-eligible cattle received directly from a farm of origin. All test-eligible cattle must be tested at their first point of concentration regardless of their final destination.

- 2) Reactors--At least 80 percent of MCI reactors during each 12-month period must be traced to the herd of origin and an investigation conducted as outlined in Chapter 1, Part II, Section 7, D within 30 days of the time that the MCI test results are reported to the State Animal Health Official or the Veterinarian in Charge of the area involved. When a herd blood tested within 45 days from the time the owner is officially notified of the reactor, unless an approved action plan is on file which provides for a herd test after a longer interval. However, if the herd blood test is not conducted

within the first 30 days from the time the owner is officially notified of the MCI reactor, the herd must be confined to the premises under quarantine. (For exceptions see Chapter 1, Part II, Section 1, H).

If States with 20 or fewer MCI reactors cannot trace at least 80 percent of reactors to the herd of origin, an explanatory statement and a request for exemption from this standard may be prepared and submitted with the 12-month special report.

A State or area may lose Class C status if the herds of origin of market cattle reactors that are positive on the rivanol or CF test are considered suspicious after a complete epidemiologic investigation and are not tested within six months of the time the owner is officially notified of the MCI reactor. A State or area may not lose status if the State has taken legal action to obtain a test and active legal proceedings are in progress.

- 3) Reporting results--To maintain or to advance status, all MCI reactors originating in the reporting State are to be reported in the 12-month report. The report must include the number of successful and unsuccessful tracebacks and the number of herds of origin that were tested. The data summarizing the successful and unsuccessful tracebacks for cattle with backtags and for cattle without backtags should be presented separately.

c. Epidemiologic Surveillance

- 1) Adjacent herds--All adjacent herds or other herds having contact with cattle from the affected herd must have an approved action plan for testing or monitoring the herd(s). These plans must be in effect within 45 days of the time infection is found. If there is disagreement about the necessity for testing a herd, the herd owner, the State Animal Health Official or his representative, the designated epidemiologist, and, if requested, the herd owner's veterinarian, will consult to resolve the situation. The initial herd blood test of those herds requiring a test should be conducted within 60 days of the time infection is found in the first herd. (For exceptions see Chapter 1, Part II, Section 1, H.)
- 2) Epidemiologically traced herds--All herds of origin of cattle that have been sold into an affected herd and all herds receiving cattle from an affected herd must have an approved action plan for testing or monitoring the herd(s). The approved action plan must be in effect within 45 days of locating the herd of origin or the recipient herd. If there is disagreement regarding the necessity for testing a herd, the herd owner, the State Animal Health Official or his representative, the designated epidemiologist, and if requested, the herd owner's veterinarian, will consult to

resolve the situation. The initial herd blood test of those herds requiring a test should be conducted within 60 days of the time that association with the affected herd is discovered. (For exceptions, see Chapter 1, Part II, Section 1, H.)

2. Herd infection rate

- a. In States with 1,000 or more herds, the accumulated 12-month herd infection rate from field strains of Brucella may exceed 1.500 percent or 15 herds per 1,000. Infection with field strains must be assumed in each case until veterinary officials in the State show otherwise by culture or by complete epidemiologic investigation. In States with 1,000 or fewer herds, representatives of the Chief Staff Veterinarian, Domestic Program Support, will conduct a special review to determine if a State with a herd infection rate of more than 1.500 percent should qualify for Class B status. This evaluation will include, but not be limited to, the following factors:
 - 1) The number of reactor herds assumed (or proven) to be due to field strains of Brucella ;
 - 2) The location of the infected herds and the distances between them, i.e., clusters of infected herds or scattered infected herds;
 - 3) Whether infections have a common source(s) or are separate outbreaks and whether secondary spread has occurred;
 - 4) Whether State policies and authorities are adequate and are applied to control and eliminate the outbreak(s);
 - 5) Whether the herd quarantine(s) and its enforcement is adequate;
 - 6) The number of additional herds at risk of becoming infected;
 - 7) Whether depopulation has been used to contain the outbreak(s); and
 - 8) The effectiveness of herd management practices in the infected herds to control the spread of disease within the herd and to other herds at risk.
- b. An epidemiologic investigation of each herd with reactor cattle must be conducted within 45 days to identify the potential sources of infection. All such potential sources must be contacted within an additional 30 days to determine appropriate action. (For exceptions see Chapter 1, Part II, Section 1, H.)

3. Prevalence rate of MCI reactors --The 12-month adjusted MCI reactor prevalence rate may exceed three reactors per 1,000 cattle tested (0.300 percent). For purposes of State or area classification, MCI reactors are defined as nonvaccinated cattle positive on the standard

card test, and vaccinated cattle positive on the rivanol test at 1:25 or higher. The adjusted MCI reactor prevalence rate is calculated by deleting from the numerator the market cattle reactors that originate from known reactor herds, market cattle reactors traced to out-of-State origins, and market cattle reactors that originate from herds of origin that subsequently had a herd blood test and were found negative for brucellosis. The adjusted MCI reactor prevalence rate used to distinguish Class B from Class C status will be reduced from 0.300 percent to 0.200 percent, provided the annual review of Brucellosis Committee of the United States Animal Health Association supports this change. State or Federal personnel will conduct a complete epidemiologic investigation, with appropriate tests of adjacent and contact herds, on any herds of origin of MCI reactors in which all test-eligible cattle and nonvaccinated heifers and bulls between six and 18 months of age have been eliminated by slaughter. Special consideration will be allowed when the status of a State or area is affected by unusual or extreme marketing conditions.

4. Complying with the Uniform Methods and Rules

- a. States must continuously comply with the requirements of the UM&R. A State's compliance will be judged by administrative review and epidemiologic evaluation.
- b. A State must make continued progress in reducing the prevalence of brucellosis as determined by epidemiologic evaluation covering a two-year period of program operation.
- c. If a State fails to maintain the minimum procedural standards set forth in the UM&R, the State may be reclassified as a Federal Quarantined Area. Before its Class C status is lowered, the State may request a peer group review (Chapter 1, Part II, Section 1, I) at the State's expense. The State and Federal officials in charge of program activities will be notified in writing of any apparent deficiencies that may affect the status of the State classification. In response, the State and Federal officials in charge of the program activities will determine and describe in writing the corrective actions that the State will take. The response must include a schedule for taking any needed corrective actions. A State may regain Class C status when it has corrected all procedural deficiencies causing the loss of status and a minimum of six months have elapsed demonstrating the effectiveness of the corrective action(s).

D. Movement of Cattle within and from Class C States or Areas for Certain Purposes

1. Cattle exempt from testing requirements --The following cattle from nonquarantined herds are specifically exempt from test or certificate requirements to qualify for either interstate or intrastate movements: (A certificate is required for the interstate movement of other cattle from Certified Brucellosis-Free herds.)

- a. steers and spayed heifers;
- b. nonvaccinated cattle under 18 months of age as evidenced by the presence of the first pair of temporary incisor teeth;
- c. official calfhood vaccinates of the dairy breeds under 20 months of age, unless they are heavy springers or have calved;
- d. official calfhood vaccinates of the beef breeds under 24 months of age as evidenced by the absence of the first pair of fully erupted permanent incisor teeth, unless they are heavy springers or have calved;
- e. other cattle moving directly to slaughter from the herd of origin; and
- f. other cattle moving directly from Certified Brucellosis-Free herds. However, a certificate is required for interstate movement of cattle from Certified Brucellosis-Free Herds that are moved for feeding or for breeding.

2. For feeding

- a. Movements to quarantined feedlots or quarantined pastures:
 - 1) Quarantined feedlots do not exist in Class-Free States or areas. Therefore, no cattle may move to quarantined feedlots or pastures in Class-Free States or areas.
 - 2) Exposed cattle from quarantined herds, except steers and spayed heifers, must be "S" hot iron branded before being moved interstate to quarantined feedlots. An "S" brand permit is required for this movement.
 - 3) Test-eligible cattle from nonquarantined herds (excluding Certified Brucellosis-Free Herds) must be tested within 30 days before movement, or be "S" hot iron branded and accompanied by an "S" brand permit. These cattle may be moved to a quarantined feedlot directly from a herd of origin without being accompanied by an "S" brand permit if they are "S" branded upon arrival at the quarantined feedlot. They may be moved directly from a herd of origin to a Specifically Approved Stockyard to be sold to a quarantined feedlot without being "S" branded and without being accompanied by an "S" brand permit. Test-eligible cattle moving interstate on an official negative test must have a certificate.
- b. Movement to other feedlots--The testing and documentation requirements are the same as for breeding cattle.

3. For immediate slaughter

- a. Exposed cattle from quarantined herds must be "S" hot iron branded

and moved with "S" brand permit to recognized slaughter establishments or to Specifically Approved Stockyards or State approved livestock markets to be sold for immediate slaughter. Instead of "S" branding, cattle may move directly to slaughter from either a Specifically Approved Stockyard or a State approved livestock market or from a herd of origin in sealed vehicles accompanied by an "S" brand permit. Exceptions to the "S" branding and "S" brand permit requirements are allowed for finished fed heifers moving directly to immediate slaughter at recognized slaughter establishments and for exposed cattle in cases where moving them to slaughter does not require rail or motor carrier transportation.

- b. Cattle from Certified Brucellosis-Free herds may move to recognized slaughter establishments or to Specifically Approved Stockyards or State approved livestock markets to be sold for immediate slaughter without being tested if the identity of the herd of origin is maintained.
- c. Test-eligible cattle originating in other nonquarantined herds may move directly to recognized slaughter establishments or to Specifically Approved Stockyards or to State approved livestock markets to be sold for immediate slaughter without "S" hot iron brand or "S" brand permit. To move from either the Specifically Approved Stockyards or State approved livestock market to slaughter, the cattle must be "S" branded and must be accompanied by "S" brand permits. Instead of "S" branding, cattle may move directly to slaughter from either a Specifically Approved Stockyard or State approved livestock market in sealed vehicles accompanied by an "S" brand permit or they may be tested negative within 30 days before movement.
- d. Test-eligible cattle originating from dealers' concentration points for slaughter must be "S" hot iron branded and must move with "S" brand permit to a recognized slaughter establishment, or through a Specifically Approved Stockyard or State approved livestock market to be sold for slaughter. Instead of "S" branding, cattle may move directly to slaughter from those livestock markets in sealed vehicles accompanied by an "S" brand permit or they may be tested negative within 30 days before movement. An exception to the "S" branding and "S" brand permit is allowed for test-eligible untested cattle, in cases where moving them to slaughter does not involve transportation by rail or motor carrier.

4. For breeding

- a. Test-eligible cattle from Certified Brucellosis-Free Herds may move without testing if the identity of the herd of origin is maintained. A certificate is required for interstate movement. It is recommended that the cattle be tested at the destination 45-120 days after movement.
- b. Test-eligible cattle from other nonquarantined herds may move

intrastate if they have a negative test within 30 days before movement. The negative test may be performed at Specifically Approved Stockyards or State approved livestock markets that have approved laboratory facilities for testing. A retest at the destination 45 to 120 days after movement is strongly recommended. No certificate is required.

- c. Test-eligible vaccinated cattle from other nonquarantined herds may move interstate if they have one negative test within 30 days before interstate movement and are accompanied by a certificate which includes the test date and test results. A permit for entry is required from the receiving State before movement, if the cattle are moved from the herd of origin directly to the herd of destination. Cattle may be moved interstate from a nonquarantine herd without a certificate and permit for entry if they go directly to a Specifically Approved Stockyard for the required negative test. A certificate is required for those test negative cattle that subsequently move interstate from a Specifically Approved Stockyard. A permit for entry is required from the receiving State before movement from the Specifically Approved Stockyard. The cattle must be quarantined at destination and retested 45-120 days after movement.
- d. Test-eligible non-vaccinated cattle from other nonquarantined herds may move interstate if they are from a farm of origin and are negative to a herd blood test within 1 year prior to interstate movement. In addition, no cattle (except cattle from herds of like status or cattle from certified brucellosis-free herds) can be added to the herd for at least 120 days before the herd blood test or between the time of the herd blood test and movement. If the herd blood test is not conducted within 30 days prior to interstate movement, the cattle must be negative to a second official test within 30 days prior to movement. The cattle must have been issued a permit for entry and be accompanied by a written statement signed by the owner and an accredited veterinarian, or other documentation, which shows that the cattle originated from a herd to which no cattle (except cattle from certified brucellosis-free herds or cattle from herds of like status) had been added for at least 120 days before the herd blood test or between the time of the herd blood test and movement.

A certificate and permit for entry are not required if the cattle are moved directly from the herd of origin to a Specifically Approved Stockyard for the second negative test. However, for subsequent interstate movement from the Specifically Approved Stockyard, a certificate is required for those test negative cattle. A permit for entry is required from the receiving State before movement from the Specifically Approved Stockyard. The cattle must be quarantined at destination and retested 45-120 days after movement.

- e. The testing requirements of D, 3, b, c, and d for intrastate and interstate movements are not required if all of the following

conditions apply:

- 1) The cattle being moved are from a herd that is not known to be affected, and
- 2) The cattle being moved have not changed ownership and are not changing ownership, and
- 3) The cattle are from a farm of origin and are negative to a herd blood test within 12 months of movement, and
- 4) Any cattle that were added to the herd after the herd blood test were also tested negative within 30 days prior to the date the cattle were added to the herd, and
- 5) The cattle being moved have not come in contact with cattle not meeting these requirements.
- 6) The cattle are accompanied by a document which shows the dates and results of herd blood tests and the name of the laboratory that conducted the test.

The intent of this exception is to allow grazing associations, farmers, and ranchers to follow normal ranching operations when crossing jurisdictional boundaries during these movements, without subjecting their cattle to unnecessary handling and testing.

- f. Female dairy cattle born after January 1, 1984, that are four months of age and older, must be official vaccinates if they are moved into or out of a Class B State or area, unless they are moved directly to a recognized slaughter establishment or to a quarantined feedlot.

All female cattle born after January 1, 1984, that are four months of age and older, must be official vaccinates if they are moved into or out of a Class C State or area, unless they are moved directly to a recognized slaughter establishment or to a quarantined feedlot.

Female cattle that are eligible for official calfhood vaccination and that are required to be officially vaccinated may be moved interstate directly to a Specifically Approved Stockyard and officially vaccinated upon arrival at the Specifically Approved Stockyard.

- g. It is recommended that all female breeding stock moving interstate, especially from higher incidence states, be calfhood vaccinated.

5. Heifer calves from affected herds

All heifer calves in an affected herd, are included under the herd quarantine restrictions. If they are retained in the herd they should be calfhood vaccinated. These heifer calves may only be moved if they comply with the requirements of a, b, c or d of this section.

As of October 1, 1988, no cattle may be moved from Class C States except steers, spayed heifers, "S" branded cattle, or cattle from certified Free herds.

- a. The heifer calves must be "S" branded or spayed, or
- b.
 - 1) The heifer calves must be quarantined and held separate and apart from the affected adult herd after weaning until they are negative on an official test following the completion of their first calving, or
 - 2) If the heifer calves remain in the affected adult herd, the entire herd shall not be released from quarantine until all the heifer calves have matured and calved, then the entire herd must be tested negative for brucellosis to qualify for quarantine release.
- c. In commercial dairy herds, heifer calves, no more than 6 months of age, must:
 - (1) Be part of a herd that is following an approved individual herd plan (IHP), (the IHP will include adult vaccination and a lowered upper-age-limit calfhood vaccination when recommended by the designated epidemiologist), and
 - (2) Be calfhood vaccinated (at the ages provided for in the IHP or the UM&R), and
 - (3) Be identified with an official eartag prior to movement. (All male calves must also be identified with an official eartag prior to movement), and
 - (4) Be separated from the dam at no more than 7 days of age, and
 - (5) Be quarantined separate and apart from other cattle after movement from the affected herd for at least 30 days, or
- d. The heifer calves that are no more than 8 months of age must:
 - (1) Be part of a herd that is following an approved individual herd plan (IHP), (the IHP will include adult vaccination and a lowered upper-age-limit calfhood vaccination when recommended by the designated epidemiologist), and
 - (2) Be calfhood vaccinated (at the age provided for in the IHP or the UM&R).

6. Testing at First Point of Concentration

All test-eligible cattle must be tested at their first point of concentration regardless of their final destination.

CHAPTER 3
SWINE BRUCELLOSIS

PART I
VALIDATED BRUCELLOSIS-FREE HERDS OF SWINE

A. Qualifying Methods

A herd may qualify for status as a Validated Brucellosis-Free Herd by the following methods:

1. Complete herd blood test --Swine herds may be initially validated or revalidated when the herd blood test (all breeding swine six months of age and older) is negative.
2. Market swine testing (MST)
 - a. A swine herd cannot be initially validated using the MST (Market Swine Test) procedures.
 - b. Revalidation--A minimum of 20 percent of the adult breeding swine (six months of age and older) in the herd must be tested as part of the MST program during the validation period, with at least one-half of the testing done during the last six months of the period. This requires that the State Animal Health Official keep records of MST results for each farm of origin so that a farm of origin may retain its validated herd status. The herd of origin of market swine reactors will be quarantined and the validated herd status suspended until a herd blood test is conducted. The herd blood test should be conducted within 30 days of finding the market reactor.
3. Increment testing
 - a. A swine herd cannot be initially validated using increment testing.
 - b. Revalidation--Adult breeding swine (six months of age and older) are tested in increments as specified in an approved herd testing plan. Each breeding animal in the herd must be tested at least once during the one-year validation period.

B. Conditions for Validating the Herd

1. Size of unit --Validated Free Herd status applies only to individual herds and includes all offspring including specific pathogen-free pigs.
2. Duration of status --A herd is validated for 12 months.
3. Testing period
 - a. For initial validation, a herd can be validated based on the results of one negative herd blood test.

b. For revalidation a herd must:

- 1) have a negative blood test of all breeding swine (six months of age and older) conducted within 10 to 12 months of the last validation date. A 60-day grace period is allowed, during which a herd may be reinstated with a single negative herd blood test; or
 - 2) establish that at least 20 percent of the adult breeding swine were tested under a market swine testing program during the one year validation period and that at least one-half of the sampling occurred during the last six months of the validation period; or
 - 3) show that all breeding swine (six months of age and older) in the herd are tested in increments according to a specified herd testing plan, with each breeding animal tested at least once during the one-year validation period.
4. Herd infection rate --There must be no evidence of infection at the time the herd is initially validated or revalidated.
 5. Animal infection rate --There must be no evidence of infection in individual animals at the time the herd is initially validated or revalidated.
 6. Suspects --If swine that are positive on the Standard Card Test are found in a herd that is otherwise serologically, bacteriologically, and epidemiologically negative, the herd may be held under quarantine until the suspects are further evaluated and their status is determined.
 7. Herd status, if infection occurs --When one or more reactors are found in a validated herd or in a herd being tested for initial validation, it will be considered infected and quarantined and the eradication procedures in Part III will apply.
 - a. Initial validation--A herd qualifies for initial Validated Brucellosis-Free status when it is free of infection, when all provisions for release of quarantine have been met, and when the additional provisions required under Part I, A, 1 have been met.
 - b. Revalidation--If a complete or partial test of a validated herd reveals reactors, herd validation status is terminated until all provisions for release of quarantine have been met, and the additional provisions for initial Validated Brucellosis-Free Herd status required under Part I, A, 1 have been met.
- Herd retests for release of quarantine may also be used to fulfill the provisions required under Part I, A, 1.
8. Movement of swine into Validated Brucellosis-Free Herds --The following rules apply when moving swine into Validated Brucellosis-Free Herds:

- a. Swine originating from Validated Brucellosis-Free Herds do not need to be tested before being moved.
 - b. Individual swine to be used for breeding must have two consecutive tests at least 60 days apart. The second test must be 30 days or less before movement. For bred sows and gilts, the second test should also be at least 30 days after they have farrowed.
 - c. Swine from feedlots may not be added to Validated Brucellosis-Free herds. However, swine may be consigned to feedlots on premises with Validated Brucellosis-Free Herds without testing, provided those swine are held in isolation, segregated from all breeding stock.
 - d. Consignments of slaughter swine may not be added to Validated Brucellosis-Free Herds.
9. Movement of swine semen for artificial insemination to Validated Brucellosis-Free Herds
- a. From purebred herds--Purebred herds from which semen is collected must be validated using a herd blood test.
 - b. From commercial boar studs--Commercial boar studs from which semen is collected must be validated using both herd blood tests and herd semen agglutination tests.

PART II
VALIDATED BRUCELLOSIS-FREE AREAS

A. Methods for Qualifying

An area may attain Validated Brucellosis-Free status by successfully carrying out the requirements of the three qualifying stages.

1. Stage I

- a. States can enter Stage I by submitting a joint statement by the Veterinarian in Charge and the State Animal Health Official to the appropriate Veterinary Services Regional Director. The statement must indicate:
 - 1) That the State has obtained the legal authorities listed below and that these authorities are in effect. If any of the listed authorities have not been obtained, the statement should explain the steps that will be taken to gain that authority or the reasons that a particular authority will not be needed to carry out the program in that State.
 - a) Legal authority to place and maintain a quarantine on any premises on which swine are infected with Brucella, or exposed to brucellosis, or suspected of being infected;
 - b) Legal authority to regulate intrastate movement of swine that are infected with Brucella or exposed to brucellosis;
 - c) Legal authority to perform the necessary tests and epidemiological investigations to determine the presence or absence of brucellosis in swine;
 - d) Legal authority to require proper identification and disposal of infected and exposed swine;
 - e) Legal authority to require cleaning and disinfection of premises, vehicles, and equipment that may have been contaminated by infected swine;
 - f) Legal authority to conduct and control the procedures for testing and reporting all tests;
 - g) Legal authority to require a tattoo or other approved animal identification for moving slaughter swine (sows and boars) intrastate. The identification must be compatible with the approved identification methods used for interstate movement;
 - h) Legal authority to require records identifying the herd of origin in a manner that makes it possible to trace back swine, and to make these records available to animal

health personnel for the purposes of the program; and

- 1) Legal authority to require testing of breeding swine from nonvalidated herds when they change ownership.
 - 2) That a State swine brucellosis committee has been established and that its membership includes swine producers and representatives of other livestock industry groups.
 - 3) That all persons responsible for identifying swine under 9 CFR Part 78 are complying with those requirements.
 - 4) That a Validated Brucellosis-Free Herd program is in effect for that State.
- b. States that have entered Stage I must carry out the following procedures. They must:
- 1) Quarantine and promptly test all suspicious herds to establish the status of the herd. Depopulate the herd or initiate an active retest program for those herds found to be infected.
 - 2) Tag and slaughter reactors within the established time limits.
 - 3) Comply with all provisions of the Uniform Methods and Rules (UM&R), Chapters 1 and 3, that do not depend upon the action of another State.
 - 4) Distribute information prepared by USDA information staff and other cooperating agencies in cooperation with the Cooperative Extension Service, university swine disease specialists, State veterinary publications, appropriate news agencies, etc.
 - 5) Prepare an educational statement on brucellosis to be distributed to persons receiving breeding swine on transfer of ownership.

2. Stage II

- a. States can enter Stage II by documenting that they have met all of the requirements of Stage I. To remain in Stage II, they must continue to meet those requirements.
- b. States that have entered Stage II must institute an active program to locate and eliminate infection. Any of the following basic surveillance programs can be selected:
 - 1) Complete herd (area) testing--test all breeding swine six months of age and older in the qualifying area. The complete herd test must be conducted within the 18-month period before the date validation is requested.

- 2) Slaughter surveillance (alternate method 1--during a one-year period:
 - a) Blood test all herds selling breeding stock;
 - b) Blood test 90 percent or more of the sows and boars from the area sold for slaughter; and
 - c) Trace 90 percent or more of the reactors to their herds of origin and eliminate the disease by testing or depopulating the herd.
- 3) Slaughter surveillance (alternate method 2--during a two-year period:
 - a) Blood test on the farm all herds selling breeding stock; and
 - b) Show capability for MST traceback of 50 percent or more and elimination of the disease from MST reactor herds of origin by testing or depopulating the herd. Traceback capability is the product of the percentage of slaughter sows and boars tested x the percentage of reactors traced. (See Traceback Capability Chart, page __.)

3. Stage III--Validated Brucellosis-Free Status

- a. Initial validation--A State will be initially validated as a Validated Brucellosis-Free Area when it meets the qualifying standards in Part V, Section B of the UM&R, and when:
 - 1) It has met the requirements of the selected surveillance method described in Stage II, or
 - 2) It has not had a diagnosed case of swine brucellosis in the preceding 12 months and a statistical analysis of combined results of testing (MST, change of ownership, farm, validation, diagnostic test, etc.) conducted during the period shows an effect equivalent to the alternate methods of slaughter surveillance.
- b. Revalidation--A State will be revalidated as a Validated Brucellosis-Free Area when it has satisfied one or more of the following:
 - 1) Complete herd testing--Validated States or areas may be revalidated by a negative herd test on all breeding swine six months of age or older. The complete herd test must be conducted within the 18-month period before the date of revalidation.
 - 2) Slaughter surveillance (alternate methods)--The entire

State may keep its validation status if it meets the following criteria:

- a) The traceback capability from slaughter is maintained at 50 percent or greater, herds of origin of successfully traced reactors are tested, and all MST reactors and tests of herds of origin of reactors are reported.
 - b) When infection is found, the herd of origin is freed of infection within six months and an epidemiologic investigation is carried out to determine the extent of spread.
- 3) Boar Testing Only
- a) At slaughter, test 95 percent of the boars marketed in an area each year.
 - b) Trace 95 percent of the reactors to their herds of origin and eliminate the disease by testing or depopulation.
- 4) Combined surveillance--States that have met all other requirements but are unable to qualify for revalidation because they are unable to satisfy the surveillance requirements of complete herd testing or of slaughter surveillance may qualify by showing that they have achieved an equivalent level of surveillance by a combination of procedures. (See Section A, 3, a, 2, above.)

B. Conditions for Validating an Area

1. Size of area --Validated Brucellosis-Free Area status usually applies to an entire State. However, counties may also validate or revalidate by the area (complete herd test) method.
2. Duration of status --An area is validated for a period of three years.
3. Testing period
 - a. For initial validation--The testing period for initial validation is 18 months immediately preceding the request for validation, when qualifying by the complete herd blood test method. The testing period for initial validation is twelve months immediately preceding the request for validation when using alternate method 1 of slaughter surveillance, and 24 months when using alternate method 2 of slaughter surveillance.
 - b. For revalidation--The testing period for revalidation is 18 months when using the complete herd blood test method and three years when using any of the other methods listed in Section A, 3, b, above.
4. Herd infection rates

- a. For initial validation--The herd infection rate may not exceed three percent of the herds or one herd, whichever is greater, during the testing period. There must be no known foci of swine brucellosis in the area at the time of validation.
 - b. For revalidation--There is no acceptable level of infection in a validated State. Indigenous or introduced infection found after the qualifying period will cause the area to lose its status if the disease spreads to other herds or if the herd is not freed of the disease by testing or depopulation within six months. An area may regain its validated status on the recommendation of the appropriate regional epidemiologist who documents that all deficiencies have been corrected and that an effective epidemiological investigation to locate additional infection has been carried out.
5. Animal infection rates --Animal infection rates are not considered.
 6. Feral swine --If domestic swine in a State are free of brucellosis under program standards and there is no evidence of transmission of brucellosis from feral swine to domestic swine, a State may be validated regardless of the brucellosis status of the feral swine in that State. Feral swine include only those wild swine that are not under the control of man.
 7. Suspects --Swine that are positive on the standard card test and that are located in a herd which is otherwise serologically, bacteriologically, and epidemiologically negative may be held under herd quarantine as suspects. These swine are to be subjected to further evaluation to determine their brucellosis status.
 8. Area status, if excessive infection rates occur --If an area does not qualify for initial validation because of excessive herd infection rates, a new testing period must be established. All herds in which brucellosis has been known to exist must be legally released from quarantine before the area is validated.
 9. Movement of swine into or within Validated Brucellosis-Free Areas --The following rules apply when moving swine into or within Validated Brucellosis-Free Areas:
 - a. For feeding--Feeding swine consigned to feedlots may move into or within validated areas without being tested, provided they are held in separate facilities with no physical contact with any breeding stock.
 - b. For slaughter--Swine consigned to slaughter may move into or within validated areas without being tested. These swine may not be diverted en route to slaughter for any other purpose.
 - c. For breeding or for purposes other than 9 a and 9 b.
 - 1) Swine from Validated Brucellosis-Free herds or herds in

Validated Brucellosis-Free Areas--There are no testing requirements for swine originating in Validated Brucellosis-Free herds or areas. Swine must be moved directly from the herd of origin to the intended destination without any contact with swine of lesser status.

- 2) Swine from Nonvalidated herds in Nonvalidated Areas--Individual swine from nonvalidated herds in nonvalidated areas must have a negative blood test within 30 days before the date they enter a Validated Brucellosis-Free Area. Before being added to the herd, these swine must be held in isolation and pass an additional blood test conducted between 60 and 90 days after the test for entry.

10. Movement of swine semen for artificial insemination into Validated Areas

- a. Purebred herds from which semen is collected must be validated using the herd blood test procedures.
 - b. Commercial boar studs from which semen is collected must be validated using the herd blood procedure. In addition, all boars in the stud herd must be negative on the semen agglutination tests.
- Probability of Successful Traceback Based on Percent of Animals Sampled and Identified

		Percent Reactors Traced										
		50	55	60	65	70	75	80	85	90	95	
% S A M P L E D		50	25	27	30	32	35	37	40	42	45	48
		55	27	30	33	36	38	41	44	47	49	52
		60	30	33	36	39	42	45	48	51	54	57
		65	32	36	39	42	45	49	52	55	58	62
		70	35	38	42	45	49	52	56	59	63	67
		75	37	41	45	49	52	56	60	64	67	71
		80	40	44	48	52	56	60	64	68	72	76
		85	42	47	51	55	59	64	68	72	76	81
		90	45	49	54	58	63	67	72	76	81	86
		95	48	52	57	62	67	71	76	81	86	90

The point of intersection of the "traced" and "sampled" columns indicates traceback capability. Example: A sampling rate of 80 percent with 70 percent of the reactors traced would provide a traceback capability of 56.

PART III
PLANS FOR ERADICATING BRUCELLOSIS
FROM INFECTED SWINE HERDS

If infection is found in any swine herd, the owner should select one of the following plans for eradicating the disease:

1. PLAN 1 --This plan is recommended for commercial herds. Carry out the following procedures:
 - a. Sell the entire herd for slaughter as soon as is practicable.
 - b. Clean and disinfect houses and equipment.
 - c. Restock premises with animals from Validated Brucellosis-Free Herds, placing them on ground that has been free of swine for at least 60 days.
2. PLAN 2 --This plan is recommended only when the owner wants to preserve valuable blood lines. Carry out the following procedures:
 - a. Separate pigs from sows at 28 days of age or younger and isolate the pigs. The separated weanling pigs form the nucleus for establishing an infection-free herd.
 - b. Completely isolate the infected animals. Infected sows should not be rebred and should be slaughtered as soon as possible. Sell the infected herd for slaughter as soon as is practicable.
 - c. Test the gilts to be used for the following season about 30 days before breeding them. Save only the gilts that are negative. Breed them only to negative boars.
 - d. Retest gilts after farrowing and before removing them from individual farrowing pens or crates. If reactors are found, they should be segregated from the remainder of the herd and slaughtered as soon as possible. Select only pigs from negative sows for breeding gilts.
 - e. If reactors are found in step d, repeat the process, beginning with step a.
 - f. After two consecutive negative herd blood tests the herd is eligible for release from quarantine. The first test must be at least 30 days after all reactors have been removed and slaughtered and the second test must be at least 90 days after the first test.
3. PLAN 3 --This plan is not recommended in general, but it has been found useful in herds where only a few reactors are found and where no clinical signs of brucellosis have been noted. Carry out the following procedures:
 - a. Sell reactors for slaughter.

- b. Retest the breeding herd at 30-day intervals, removing reactors for slaughter, until the entire herd is negative.
- c. If the herd is not readily freed of infection, abandon this plan in favor of Plan 1 or Plan 2.
- d. After two consecutive negative tests the herd is eligible for release from quarantine. The first test must be at least 30 days after all reactors have been removed and slaughtered and the second test must be at least 90 days after the first test.

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